Avid® Media Composer®

Advanced Guide

Avid

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Using This Guide

Congratulations on your purchase of an Avid editing application. You can use your application to create broadcast-quality output incorporating every possible production element from full-speed, high-resolution footage, to multimedia artwork and animation, to computer-generated effects and titling.

This guide contains all the advanced task-oriented instructions and conceptual information you need to use the capture, editing, and output features of your Avid application, as well as information about file format specifications, and other supplementary information. The Basics Guide for your Avid application is a companion to this Advanced Guide. It contains all the basic task-oriented instructions and conceptual information you need to get started using the product. The contents of this guide and of the Basics guide are also available in the Help. This guide is intended for all users, from beginning to advanced. Unless noted otherwise, the material in this document applies to the Windows® XP operating system.

Unless noted otherwise, the material in this document applies to the Windows XP and Mac OS X operating systems.The majority of screen shots in this document were captured on a Windows XP system, but the information applies to both Windows XP and Mac OS X systems. Where differences exist, both Windows XP and Mac OS X screen shots are shown.

The documentation describes the features and hardware of all models. Therefore, your system might not contain certain features and hardware that are covered in the documentation.

Symbols and Conventions

Avid documentation uses the following symbols and conventions:

Symbol or Convention	Meaning or Action
	A note provides important related information, reminders, recommendations, and strong suggestions.
	A caution means that a specific action you take could cause harm to your computer or cause you to lose data.
	A warning describes an action that could cause you physical harm. Follow the guidelines in this document or on the unit itself when handling electrical equipment.
>	This symbol indicates menu commands (and subcommands) in the order you select them. For example, File > Import means to open the File menu and then select the Import command.
▶	This symbol indicates a single-step procedure. Multiple arrows in a list indicate that you perform one of the actions listed.
⌘	This symbol represents the Apple or Command key. Press and hold the Command key and another key to perform a keyboard shortcut.
(Windows®), (Windows only), (Macintosh), or (Macintosh only)	This text indicates that the information applies only to the specified operating system, either Windows XP or Macintosh OS X.
Italic font	Italic font is used to emphasize certain words and to indicate variables.
`Courier Bold font`	Courier Bold font identifies text that you type.
Ctrl+*key* or *mouse action* ⌘+*key* or *mouse action*	Press and hold the first key while you press the last key or perform the mouse action. For example, ⌘+Option+C or Ctrl+drag.

If You Need Help

If you are having trouble using your Avid editing application:

1. Retry the action, carefully following the instructions given for that task in this guide. It is especially important to check each step of your workflow.
2. Check for the latest information that might have become available after the documentation was published:
   - If the latest information for your Avid product is provided as printed release notes, they ship with your application and are also available online.
   - If the latest information for your Avid product is provided as a ReadMe file, it is supplied in your Avid application folder as a PDF document (ReadMe.pdf) and is also available online.

     You should always check online for the most up-to-date ReadMe because the online version is updated whenever new information becomes available. To view the online ReadMe, select ReadMe from the Help menu, or visit the Knowledge Base at www.avid.com/readme.
3. Check the documentation that came with your Avid application or your hardware for maintenance or hardware-related issues.
4. Visit the online Knowledge Base at www.avid.com/onlinesupport. Online services are available 24 hours per day, 7 days per week. Search this online Knowledge Base to find answers, to view error messages, to access troubleshooting tips, to download updates, and to read or join online message-board discussions.

Accessing the Online Library

The Online Library for your Avid editing application contains all the product documentation in PDF format, including a Master Glossary of all specialized terminology used in the documentation for Avid products.

Most Avid online libraries also include multimedia content such as tutorials and feature presentations. This multimedia content is an excellent first resource for learning how to use your application or for helping you understand a particular feature or workflow.

The Online Library for your Avid editing application is installed along with the application itself.

You will need Adobe® Reader® to view the PDF documentation online. You can download the latest version from the Adobe web site.

To access the Online Library, do one of the following:

- From your Avid editing application, select Help > Online Library.
- From the Windows desktop, select Start > Programs > Avid > *Avid editing application* Online Library.
- Browse to the Online Library folder, and then double-click the MainMenu file.

  The Online Library folder is in the same location as the application itself, for example:

  (Windows) C:\Program Files\Avid*Avid editing application*\Online Library

  (Macintosh) Macintosh HD/Applications/*Avid editing application*/Online Library

How to Order Documentation

To order additional copies of this documentation from within the United States, call Avid Sales at 800-949-AVID (800-949-2843). If you are placing an order from outside the United States, contact your local Avid representative.

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Chapter 1

Working with the Project Window: Advanced

The Project window provides controls for structuring and viewing important information about your current project. You can also modify User, Project, and Site settings from the Project window and display a list of effects.

The following topics describe advanced features of the Project window:

- Working with User Profiles
- Managing Folders and Bins
- Using the Info Display
- Displaying Usage Information
- Customizing the Appearance of the Avid User Interface
- Customizing Your Workspace
- Sharing Bins and Projects in an Avid Unity Environment

For basic information about the project window, see “Working with the Project Window: Basics” in the Help or the Basics Guide for your Avid editing application.

Working with User Profiles

You can establish different profiles for a single user. User profiles allow you to switch between settings without having to log out of your system and log back in under a different user name.

Understanding User Profiles

User profiles allow you to establish separate settings for different editing functions. User “Jane,” for example, can have separate profiles for “Audio editor,” “Film editor,” or for “Assistant 1,” “Assistant 2,” and so on.

Each user profile is stored in settings files within a folder, as described in "Understanding the Avid Projects and Avid Users Folders" in the Help. User profile folders are kept in the following folder:

- (Windows) *drive*:\Program Files\Avid*Avid editing application*\Avid Users\UserName
- (Macintosh) /Users/Shared/*Avid editing application*/Avid Users/*UserName*

You can work with user profiles in the following ways (for step-by-step procedures, see "Managing User Profiles" on page 43):

- Create new user profiles
- Switch between user profiles
- Return to the original user profile
- Import settings from another user or user profile
- Create a user profile on one system, export it to a server, and then import the same user profile from another system to the new system.

  When you export a user profile, you can select either a Personal or Group profile.

  - When you select Personal, the user profile performs an auto-load and an auto-save every time you open a project. Every time the user profile is updated, it saves the new profile information. For example, you can create the user profile *Jennie* on one system, export it to another location (a server), and then import it to a different system. Any time you change the *Jennie* user profile, it updates to the server and when you open the *Jennie* user profile on either system, it uses the most updated *Jennie* user profile.
  - When you select Group, the user profile auto-loads but it does not auto-save. Changes made to the user profile only affect the system on which the changes were made. The changes do not update to the server.

When exporting User Profiles in an Avid Unity™ environment, make sure the workspace containing the user profile has the same drive letter on all systems.

Cross-platform (Macintosh to Windows or Windows to Macintosh) user profiles can not be shared.

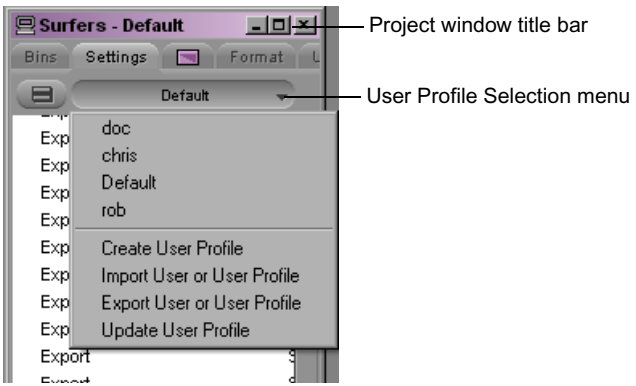
- Update a user profile with the Update User Profile option, which lets you add user settings, such as the Send To settings options, to an existing Settings list.

  For example, if you are upgrading to a version of your application that contains the Send To option from a version that did not have that option, you can choose the Update User Profile option to make sure the Send To settings templates appear in your Settings list.

Managing User Profiles

The following table describes procedures for managing user profiles.

For more information on user profiles, see “Understanding User Profiles” on page 41.

Task	Procedure
To create a user profile:	1. Click the Settings tab in the Project window. 2. Click the User Profile Selection menu, and select Create User Profile.  The Create User Profile dialog box opens. 3. Type a name in the Profile Name text box, and then click OK. The new user profile appears selected in the menu, and the user profile name appears in the Project window title bar.
To change user profiles:	1. Click the Settings tab in the Project window. 2. Click the User Profile Selection menu, and select another user profile. The new user profile name appears in the Project window title bar.
To return to the original user profile:	1. Click the Settings tab in the Project window. 2. Clilck the User Profile Selection menu, and select the default user profile.

If you are using a user profile other than the default and you change to another project, the default user settings are loaded, even though the Project window still displays your non-default user profile name. You must reselect the user profile you want to have active.

To import user settings from another user or user profile:	1. Click the Settings tab in the Project window. 2. Click the User Profile Selection menu, and select Import User or User Profile. 3. Navigate to the user or user profile you want to import.

Task	Procedure
To export user settings to another user or user profile:	1. Click the Settings tab in the Project window. 2. Click the User Profile Selection menu, and select Export User or User Profile. 3. Select Personal or Group. 4. Navigate to the location where you want to place the user or user profile. 5. Click OK.
To update user profiles:	1. Click the Settings tab in the Project window. 2. Click the User Profile Selection menu, and select Update User Profiles. Any settings that have been added to the upgraded version of the application now appear in the Settings list.
To delete a user profile from your desktop:	1. Navigate to the Avid Users folder, and then select the user folder you want to delete. For information about the location of the Avid folders, see "Using the Avid Projects and the Avid Users Folders" in the Help. 2. Do one of the following: ▶ (Windows) Press the Delete key, then click OK in the dialog box that appears. ▶ (Macintosh) Drag the folder to the Trash. 3. Empty the Recycle Bin (Windows) or the Trash (Macintosh) to remove the files from the system. 4. Close the windows, and restart the Avid application. The deleted user no longer appears in the Select Project dialog box.

Managing Folders and Bins

You can use the Project window to create hierarchies of folders and bins that reflect the specific workflow of the current project. This structure provides both simplicity and backup security. You can also manage system memory usage, and specify how often your Avid editing application saves bins automatically.

Guidelines for Project Organization

Although the specifics can vary depending on your production needs and habits, the basic principles of project management are as follows:

- Limit the number of sequences you create in each project. For instance, consider creating one new project for each show, episode, spot, or scene.
- Limit the number and complexity of clips in each bin by creating and organizing bins in three groups, as follows:
  - Create a set of bins for the capture stage.

    For example, you can create one bin for each source tape or each day's worth of dailies transfers to be captured to avoid slowing the system with large bins and causing confusion between tapes.
  - Create a second set of bins for organizing your project.

    For example, you can create a separate bin for each segment of a video project or each scene of a 24p project, depending on the preferences of the editor.
  - Create a third set of bins for the editing stage, including:

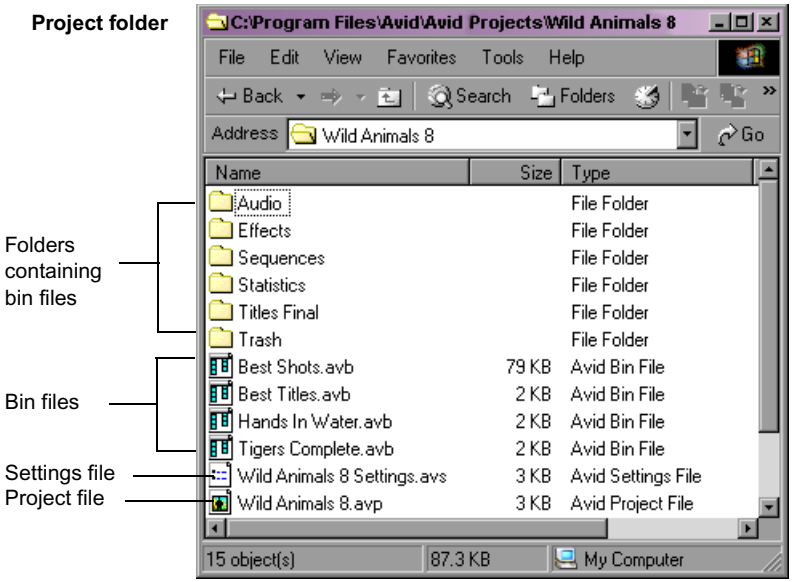
    A **current cut bin** for storing each work in progress (sequence)

    An **archive bin** for keeping the original version of each cut (sequence)

    A **selects or storyboard bin** for screening selected clips or cuts gathered from the source bins

    A **format cuts bin** for storing the final cuts with added format elements such as segment breaks, color bars and tone, slate, or countdown
- (Option) Create additional folders at the desktop level for better organization. For example, you can create one folder for each capture bin and show cut bin, or a folder to contain all shot logs to be imported.
- Save these files as templates for future productions of a similar nature.

A sample template of bins for a project is shown below.


Project folder
C:\Program Files\Avid\Avid Projects\Wild Animals 8
File Edit View Favorites Tools Help
Back Search Folders
Address Wild Animals 8
Go
Name Size Type
Audio File Folder
Effects File Folder
Sequences File Folder
Statistics File Folder
Titles Final File Folder
Trash File Folder
Best Shots.avb 79 KB Avid Bin File
Best Titles.avb 2 KB Avid Bin File
Hands In Water.avb 2 KB Avid Bin File
Tigers Complete.avb 2 KB Avid Bin File
Wild Animals 8 Settings.avs 3 KB Avid Settings File
Wild Animals 8.avp 3 KB Avid Project File
15 object(s) 87.3 KB My Computer
Folders containing bin files
Bin files
Settings file
Project file

This hierarchy allows you to have one set of bins available in the Project window during capture and organizing, and another set of bins available during editing to reduce clutter.

Creating a Folder in a Project

To create a folder in a project:

1. Click the Bins tab in the Project window.
2. Click the Fast menu button, and select New Folder.

   A new untitled folder appears.
3. Click the untitled folder name in the Bins list and rename it.

Managing Bins and Memory

System memory usage increases depending on how many bins you have open, the number of sequences in a bin, the number of tools that are open, and the size of a sequence. Using more memory can slow system performance.

In the Bin tab of the Project window, a memory usage indicator increases and updates as you open and close bins. Avid recommends that you keep memory usage below 80-85%. If you exceed the recommended usage, a dialog box opens informing you that your memory usage is high and recommending that you should close some bins and save your project.

If your system is running low on memory and you need to free up memory, you can either close your bins or use the Clear Memory button. If you close your bins, some of your memory remains unavailable until you exit the application because the online master clips remain in memory. The Clear Memory button, however, closes and saves all of your open bins and clears out any cached data of the online master clips.

To free up memory:

1. Click the Info tab of the Project window.
2. Click the Clear Memory button.

   A dialog box opens asking if you want to close and save all opened bins.
3. Click OK.

This operation deletes cached data for the online master clips only. Memory might also be used by other parts of the application and will not be reduced by using the Clear Memory button.

Bins containing sequences use more memory than bins containing master clips. For bins that contain a large number of sequences, you can free up memory and still keep your old sequences. Create an archive bin and move older sequences that you do not use anymore to the archive bin. Keep the archive bin closed.

Saving Bins Automatically

Your Avid editing application automatically saves changes to your work on a regular basis during each session. You can modify the frequency of the automatic backups by using the Bin settings in the Project window Settings list.

When you are working with bins, an asterisk (Windows) or a diamond (Macintosh) appears before the bin name in the bin's title bar. The asterisk (Windows) or diamond (Macintosh) indicates that the changes to the bin have not been saved. After you save the bin, the asterisk (Windows) or diamond (Macintosh) is removed.

When autosave occurs:

- Any open bins are updated with changes made since the last autosave.
- Copies of these bins are placed in the project's backup bin folder:
  - (Windows) *drive*:\Program Files\Avid*Avid editing application*\Avid Attic folder
  - (Macintosh) /Users/Shared/Avid Attic folder

The system automatically saves copies of all bins into the Avid Attic folder at regular intervals for backup. When your work is lost, or when you want to recover an earlier version of a bin or sequence, you can retrieve files from the Avid Attic folder. The procedure for recovering bin files from the Avid Attic folder is described in “Retrieving Files from the Attic Folder” in the Help.

For added security, you can save bins manually — for example, immediately after an important edit. For more information, see “Saving Bins Manually” in the Help.

To adjust the frequency of automatic saves:

1. In the Project window, click the Settings tab, and then double-click Bin.

   The Bin Settings dialog box opens.
2. Type a number in the Auto-Save interval text box.
3. Click OK.

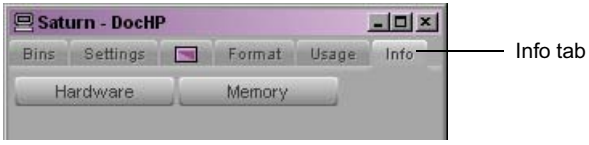
Setting to zero the maximum number of files stored in the Avid Attic folder as well as the maximum number of versions of a bin deletes existing files in the project folder in the Avid Attic folder and prevents any backup bins from being saved. For more information about backup options, click the Bin Settings dialog box and press F1(Windows) or the Help key (Macintosh), or see “Bin Settings” on page 635.

Using the Info Display

The Info display in the Project window allows you to view system memory information and access the Hardware tool.

To open the Info display:

- Click the Info tab in the Project window.



The items listed in this view are for information only and cannot be changed.

Viewing Memory

You can display system memory information in the Info tab of the Project window.

(Windows only) You can view additional memory information through the Windows Task Manager and Performance Monitor tools. You can view information about system activities, such as driver messages, through the Windows Event Viewer. For information on these tools, see the Windows Help.

You can improve the performance of large projects by reducing the number of objects. To do this, close unused bins, unmount unneeded media drives, consolidate finished elements, eliminate old material from the project, or divide the project into separate projects. Then quit and restart your Avid editing application. If performance is still slow, restart your system.

To display system memory information:

- Click the Info tab in the Project window, and then click the Memory button.

  The Memory window opens.

The following table describes the information your Avid editing application displays in the Memory window:

Item	Description
Objects	The total number of memory handles currently used by your Avid editing application. Objects include memory requirements of the application, such as windows, as well as clips, sequences, and other items associated with a project.
Total physical memory (Windows) or Total Mem (Macintosh)	The total number of bytes of RAM (random-access memory).
Available physical memory (Windows) or Free Mem (Macintosh)	The amount of RAM available for allocation by the Windows or Macintosh system.

Accessing the Hardware Tool

The Hardware tool gives a visual representation of usage for each drive and provides operating system information.

To open the Hardware tool, do one of the following:

- Click the Info tab in the Project window, and then click the Hardware button.
- Select Tools > Hardware.

  The Hardware tool opens.

For more information about the Hardware tool, see "Using the Hardware Tool" on page 87.

Displaying Usage Information

The Statistics feature gathers and reports information on system usage. You can use this information to support business functions such as resource management.

All statistics are gathered and reported by project. The file that contains this information is formatted so you can use it as input to software programs such as analysis applications, spreadsheets, or report generators.

Do not rely on the Statistics feature for billing or other financial purposes.

To view and update statistics for an open project:

- Click the Usage tab in the Project window.

To print the Statistics file:

- Select File > Print Usage.

Statistics File Structure and Layout

A new Statistics file is created each time you open the project. The files are stored in a Statistics folder inside each project folder.

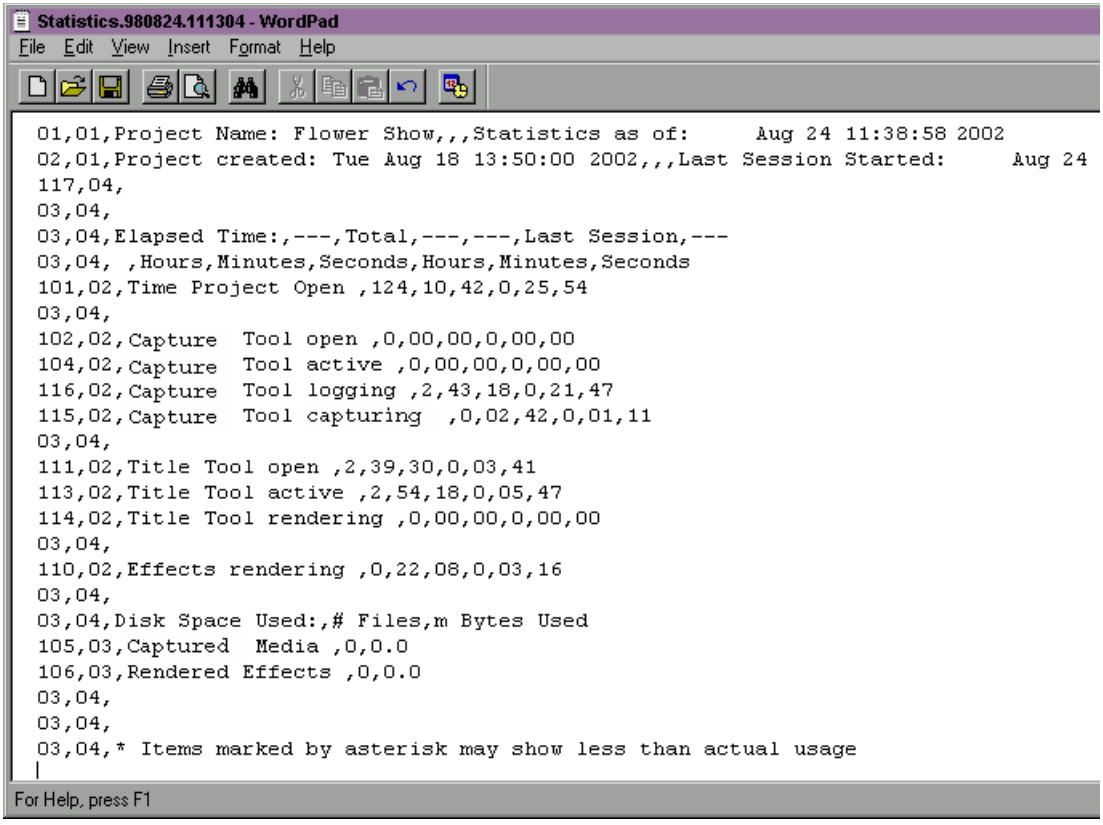
The file name has the following format:

`Statistics.`*`yymmdd.HHMMSS`*

where:

Variable	Description
yy	Indicates the last two digits of the year
mm	Indicates the month
dd	Indicates the day
HH	Indicates the hour
MM	Indicates the minutes
SS	Indicates the seconds

The statistics file is formatted as comma-separated ASCII text, so it can be accepted by a variety of software programs. Each line in the file is tagged with indicators for identifying content and data type to assist in programming custom applications. The following figure shows a sample Statistics file.



The values in the first column indicate the content of the line:

01	title1
02	title2
03	heading
100	project info
101	Time Project open
102	Capture tool open
104	Capture tool active
105	Captured Media bytes used
106	Rendered Effects bytes used
110	Effects rendering time
111	Title tool open
113	Title tool active
114	Title tool rendering
115	Capture tool capturing
116	Capture tool logging
117	user comments

The values in the second column indicate the type of data in the line:

01	project info
02	time used
03	bytes used
04	text string

Importing the Statistics File into a Spreadsheet

You can import the Statistics file into a spreadsheet or other program as an ASCII file and use the application (for example, Microsoft® Excel) to set up the proper format.

To import a Statistics file into Microsoft Excel:

1. Start Microsoft Excel.
2. Select File > Open, and navigate to the Statistics file you want to import.

   (Windows only) Make sure All Files (*.*) is selected in the Files of Type list.
3. Click Open.

   The Text Import wizard starts.
4. Select Delimited for the Original Data Type, and click Next.
5. Select Comma for Delimiters, and click Next.
6. Select General for Column Data Format.
7. Click Finish.

   The statistics file appears in spreadsheet format.

The following figure is the sample file from the previous section as it appears when you import it into a spreadsheet.

Statistics.980824.111304

	A	B	C	D	E	F	G	H	I
1	1	1	Project Name: Flower Show			Statistics as of: Mon Aug 24 11:38:58 2002			
2	2	1	Project created: Tue Aug 18 13:50:00 2002			Last Session Started: Mon Aug 24 11:13:04 2002			
3	117	4							
4	3	4							
5	3	4	Elapsed Time:	---	Total	---	---	Last Session	---
6	3	4		Hours	Minutes	Seconds	Hours	Minutes	Seconds
7	101	2	Time Project Open	124	10	42	0	25	54
8	3	4							
9	102	2	Capture Tool open	0	0	0	0	0	0
10	104	2	Capture Tool active	0	0	0	0	0	0
11	116	2	Capture Tool logging	2	43	18	0	21	47
12	115	2	Capture Tool capturing	0	2	42	0	1	11
13	3	4							
14	111	2	Title Tool open	2	39	30	0	3	41
15	113	2	Title Tool active	2	54	18	0	5	47
16	114	2	Title Tool rendering	0	0	0	0	0	0
17	3	4							
18	110	2	Effects rendering	0	22	8	0	3	16
19	3	4							
20	3	4	Disk Space Used:	# Files	m Bytes Used				
21	105	3	Captured Media	0	0				
22	106	3	Rendered Effects	0	0				
23	3	4							
24	3	4							
25	3	4	* Items marked by asterisk may show less than actual usage						

Displaying Disk Space Statistics

To improve system performance, statistics for disk space (captured media and rendered effects) are not calculated and are not displayed in the Usage window unless you issue a Console command.

To display disk space statistics in the Usage window:

1. Select Tools > Console.
2. In the command entry text box, type:

   `toggleStatSpace`
3. Press Enter (Windows) or Return (Macintosh).
4. Select File > Load Media Database.

After the media database is loaded, the Usage window displays the number of files and disk space used for captured media and rendered effects.

To update the display:

- Click the Usage tab in the Project window.

To prevent recalculation:

- Reenter the `toggleStatSpace` command.

Customizing the Appearance of the Avid User Interface

The Appearance tab in the Interface Settings dialog box provides you with controls for customizing the colors and button style of the Avid user interface. You can also change the font and point size of the type in the various windows.

For complete reference information on the Interface Settings dialog box, see "Interface Settings" on page 703.

Changing Interface Component Colors

You can use a color selection grid to change the color of interface components.

The Settings list has several Interface templates with predefined color schemes. For information about using the Interface templates, see "Using Interface Appearance Templates" on page 60.

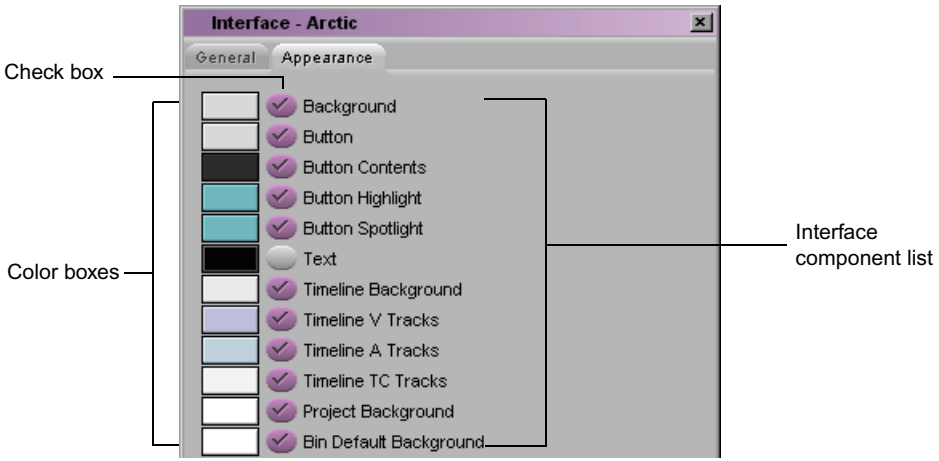
To set the color of an interface component:

1. In the Project window, click the Settings tab, and then double-click Interface.

   The Interface dialog box opens.

2. Click the Appearance tab.

   The Interface components whose colors you can change are listed in the top half of the Appearance tab, as shown in the following illustration.



3. Click in the color box next to the interface component that you want to customize.

   A color selection grid opens.

4. Click the color to which you want to set your interface component.

   The color selection grid disappears. The color you selected appears in the color box. A check mark appears in the check box to show that you want your new color attribute for this component to take effect.

If you deselect an interface component by clicking the check box, the color you specify in the color selection grid does not take effect. The color of the interface component reverts to its default value.

5. Do one of the following:
   - Click Apply to apply the changes you selected.

If you click Cancel after you click Apply, interface components retain the colors you applied.

   - Click OK to close the dialog box and put the new setting into effect.
   - Click Cancel to close the dialog box.

     The changes you selected but did not apply do not take effect.

Changing Button and Toolbar Styles

You can control the shading style and depth of buttons and toolbars. You can also change the shape of buttons and the way buttons are spaced in Monitors and in the Timeline.

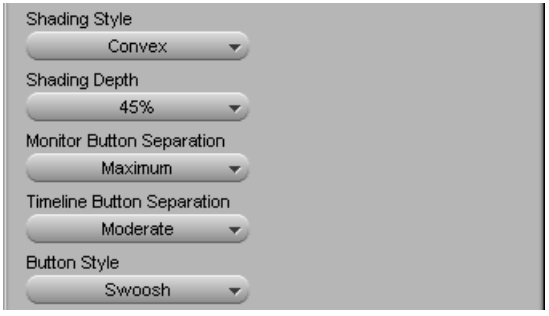
To set the style of buttons and toolbars:

1. In the Project window, click the Settings tab, and then double-click Interface.

   The Interface dialog box opens.

2. Click the Appearance tab.

   The interface component style controls appear in the bottom half of the Appearance tab, as shown in the following illustration.



3. Select from one or more of the menus, as described in the table following this procedure.

4. Do one of the following:
   - Click Apply to apply the changes you selected.

If you click Cancel after you click Apply, your editing application retains the selections you applied.

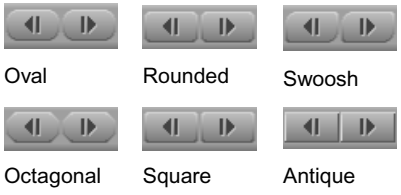
   - Click OK to close the dialog box and put the new setting into effect.
   - Click Cancel to close the dialog box.

     The changes you selected but did not apply do not take effect.

Interface Component Style Controls

Control	Description	Options	Examples
Shading Style	Controls the graphic style used to shade buttons and toolbars.	Convex Dim Radial Convex Radial Bright Radial	Convex Dim Radial Convex Radial Bright Radial
Shading Depth	Controls the three-dimensional “rounding” of the buttons and toolbars	*Percentage values*	Shading depth 5% Shading depth 50%
Monitor Button Separation Timeline Button Separation	Controls the spacing between the Monitor buttons and between the Timeline buttons	Maximum Moderate None	Maximum button separation Moderate button separation No button separation

Interface Component Style Controls

Control	Description	Options	Examples
Button Style	Controls the shape of buttons.	Oval Octagonal Rounded Square Swoosh Antique	

Using Interface Appearance Templates

There are several interface appearance templates available for the Avid user interface that have preset background and button colors.

To use an interface appearance template:

- Click to the left of one of the named Interface settings in the Settings list in the Project window.

The look of your Avid user interface changes.

To return to the default interface:

- Click to the left of the unnamed Interface setting.

For information on how to change the appearance of particular components of your Avid user interface, see "Customizing the Appearance of the Avid User Interface" on page 56.

Changing Font and Point Size

You can change the default font and point sizes of the Project, Bin, Composer, Script, and Timeline windows. You can vary the fonts and point sizes across these windows. For example, you can set the Project window to Helvetica, 13 pt.; set one Bin window to Times Roman, 11 pt.; and set another Bin window to Arial, 12 pt.

The following table describes the windows you can change, and where these changes are saved.

Window	Location of Changes
Project	Changes the font and point size of the text in the Project window; saved as a Project setting.
Bin	Changes the font and point size of the text in the Bin window; saved as a Bin setting (not a Bin View setting).
Composer	Changes the font and point size of the sequence or source clip name text; saved as a Composer setting.
Script	Changes the font and point size of the text in the Script window; saved as a Script setting.
Timeline	Changes the font and point size of clip text; saved as a Timeline View setting.

To change the font displayed in the Project, Timeline, Composer, Script, or Bin window:

1. Click the Project, Timeline, Composer, Script, or Bin window to make it active.
2. Select Edit > Set Font.

   The Set Font dialog box opens.
3. Click the Font menu, and select a font.

Any font installed on the Avid system appears in the list. For information on adding fonts to your system, see the documentation for your operating system.

4. Type another point size for the font in the Size text box.
5. Click OK.

   The new font and point size appear in the active window.

When you close the window, the last font and point size applied are saved with the window.

Customizing Your Workspace

A workspace is the arrangement and size of tool windows displayed in your Avid editing application. If you are accustomed to working with a particular group of windows arranged and sized in a particular setup, you can assign them to a workspace setting that you can then recall with a workspace button.

For example, during capture you might want to display the Capture tool and Video Input tool in specific locations. During effects editing, you might want to display the Effect Palette and Effect Editor in particular locations and sizes. For information on switching between workspaces, see "Switching Between Workspaces" on page 65.

While in a workspace, you can move tool windows or open and close tool windows. The next time you select that workspace, the tool windows appear with either:

- The arrangement from the last time you left the workspace
- The arrangement you set for the workspace, regardless of any changes you made

You can select your preference in the Workspace Settings dialog box. For more information, see "Creating a New Workspace Setting" on page 62.

You can assign up to eight buttons that allow you to switch between user-customized workspaces. This is useful if there is more than one user accessing the same Avid system. Each user can assign up to eight workspaces by using the workspace buttons. The buttons are assigned to the workspaces in the Settings list in the Project window in the order that they appear. For example, the W1 button is assigned to the first workspace that appears in the Settings list; W2 is assigned to the second workspace that appears in the Settings list; and so forth. For more information, see "Assigning a Workspace Button" on page 66.

You cannot assign certain tool windows to a workspace, such as the Hardware tool, the Communication (Serial) Ports tool, and the Media tool.

Creating a New Workspace Setting

To create a new workspace setting:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Scroll to the bottom of the Settings list, and select Workspace.
3. Select Edit > Duplicate.

   A new workspace setting appears in the Settings list.

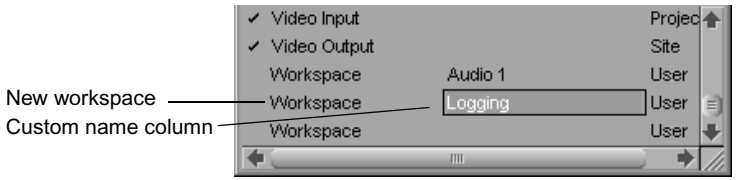
If you are duplicating a previously named workspace setting, a .1 appears at the end of the new name.

4. Click to the left of the new workspace you want to set.

   A check mark appears next to the workspace.

5. Assign a custom name to the new workspace:

   a. In the column between Workspace and User, click until you see a text cursor and box. Make sure you click the Custom name column and not the Setting name.



   b. Type a name for the new custom workspace; (for example, Logging).

   c. Press Enter (Windows) or Return (Macintosh).

   d. Open the windows and tools with which you want to associate the workspace. Resize and move the windows to the location you want them to appear on the monitors.

6. Double-click the custom workspace setting.

   The Workspace Settings dialog box opens.

7. Select or deselect the following options, depending on your preference for the behavior of the workspace:

   - **Activate Settings Linked By Name:** This setting allows you to link other settings to the workspace. For more information, see "Linking User Settings and Workspaces" on page 64.
   - **Continually Update This Workspace:** This setting automatically preserves the workspace in its most recent arrangement. Future changes to the arrangement of the tool windows are saved.
   - **Manually Update This Workspace:** This setting saves the workspace in its current arrangement when you click Save Workspace Now. Future changes to the arrangement of the tool windows are disregarded.

8. Click OK.

Linking User Settings and Workspaces

User settings can be linked to a workspace. You can create a customized workspace, set up specific options in any Settings dialog box, and link them together by name.

For example, you can create an Audio workspace that opens the Audio Mixer tool and Audio tool. This workspace can also open a customized Timeline (with enlarged audio tracks and rubberbanding displays). You can also link this workspace to a Settings dialog box with customized options selected. You do this by creating a setting and giving it the same name in the Settings list in the Project window as the name of the workspace.

To link user settings and a workspace:

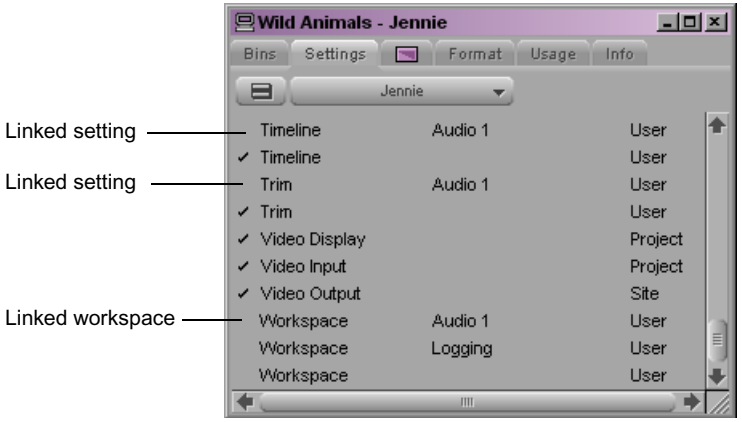
1. Create a new workspace setting.

   For more information, see "Creating a New Workspace Setting" on page 62.

2. Give the workspace a custom name.
3. Click a setting in the Settings list that you want to link to the new workspace. For example, click Timeline View. Adjust the Timeline to how you want it displayed (enlarged tracks, audio waveform, and so forth).
4. Give this Timeline View setting the same name you gave the workspace in step 2.

   For information on naming a Timeline view, see "Saving a Customized Timeline View" in the Help.

5. Double-click another setting, (for example, Audio). Select the new options, (for example, Default Pan), and close the dialog box.
6. Give this setting the same name you gave the workspace in step 2.



7. Double-click the workspace you just created.

   The Workspace Settings dialog box opens.

8. Click Activate Settings Linked By Name.
9. Click OK.

   All the settings and the new workspace you created are activated.

Switching Between Workspaces

To switch from one workspace to another:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click to the left of the workspace setting you want to use.

   A check mark appears next to the workspace.

You can also switch between workspaces by using the workspace buttons. To assign workspace buttons, see "Assigning a Workspace Button" on page 66.

Deleting a Workspace

To delete a workspace:

1. Select the workspace you want to delete from the Settings list in the Project window.

   The workspace is highlighted.

Make sure a check mark does not appear next to the workspace you want to delete. You cannot delete an active workspace.

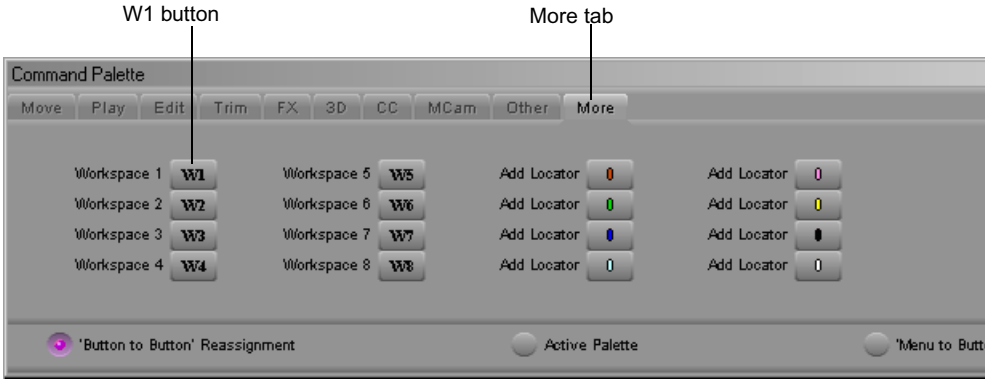
2. Press the Delete key.

   The selected workspace is removed from the Settings list.

Assigning a Workspace Button

To assign a workspace button:

1. If you want to assign a workspace button to a palette (for example, the Tool palette from the Fast menu) or the Keyboard, open the palette or Keyboard setting.
2. Select Tools > Command Palette.



3. Click the More tab.
4. Select Button to Button Reassignment.
5. Click a workspace button (W1 – W8), and drag the button to a location on another palette (for example, the Tool palette) or the Keyboard setting.

   The workspace button appears in the new location.

   The buttons are assigned to the workspaces in the Settings list in the Project window in the order that they appear. For example, the W1 button is assigned to the first workspace that appears in the Settings list; W2 is assigned to the second workspace that appears in the Settings list; and so forth.

   Your Avid editing application sorts the workspaces alphabetically. The workspace button assignments might change if you add workspaces. To keep a designated order, name the workspaces with a number preceding the first letter (for example, 2editing).
6. Click the W1 button to display the first workspace that appears in the Settings list.

   When you open the windows associated with the first workspace, they open in the assigned locations.

Sharing Bins and Projects in an Avid Unity Environment

The following topics describe how to work in an Avid Unity environment that does *not* use an asset manager or Avid Interplay Transfer. If you are using an asset manager or Avid Interplay Transfer, see the *Avid Interplay Administration Guide* and the *Avid Interplay Transfer Setup and User's Guide*.

Understanding Avid Unity

Avid Unity MediaNetwork and Avid Unity ISIS allow you to share bins and projects across the network. When you place your bins and projects on Avid Unity workspaces (drive volumes), several users can work on the same project at the same time.

For example, an editor can create sequences in one bin while an assistant recaptures media in another bin. At the same time, other users can add audio effects or titles to other bins in the project.

Each user can perform tasks from his or her own computer. Your Avid editing application provides a locking mechanism to help you keep track of who is currently working in a bin. The method allows one user to write to a bin; multiple users can read the files in that bin.

The lock does not prevent you from deleting the media in a locked bin if you have write access to the workspace. It ensures only that you don't overwrite changes to the bin.

In an Avid Unity environment, your Avid editing application creates and stores projects and bins on the client's internal drive. If a user moves or saves these projects and bins to the workspace, only one client can work on the project at a time. If two or more users are working simultaneously on the same project, only one user can update the files. Other users can open and play sequences but cannot make any changes to them.

For information on managing workspaces, see the clients' Quick Start cards. For details on Avid Unity, see the *Avid Unity MediaNetwork Management Guide or the Avid Unity ISIS Administration Guide*.

Sharing Methods

Before you begin copying or creating bins and projects on an Avid Unity workspace, determine the sharing method you are using for the project. You can either share bins alone or you can share bins and projects.

Shared Bins

When you use shared bins, you store the project on your local computer and store bins and media files on the shared workspace. This method allows users in a shared environment to share only selected bins with other users. The system identifies the shared bins as follows:

- Stores the bin in a Unity Bins folder in the Project window. This folder is similar to the Other Bins folder.
- Displays a second column of information for the bin that identifies the computer that currently has the bin locked.
- Uses bold text to identify bins that are locked by another user.

Shared Bins and Projects

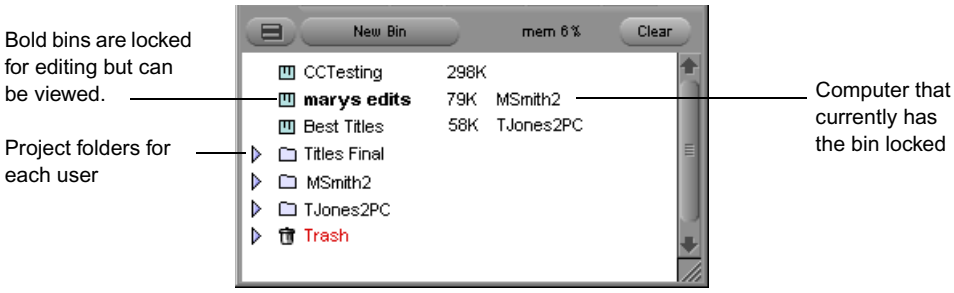
If you share bins and projects, you create and store the project folder and bins on the shared workspace (or copy an existing project, bins, and the related media files). Your Avid editing application identifies information from each computer using the shared workspace as follows:

- Creates a project folder for each computer that accesses the project. Your Avid editing application adds the computer's name to the folder name to create a unique name and stores any project-specific information in the folder. This mechanism prevents users from overwriting the project-specific data for other users.

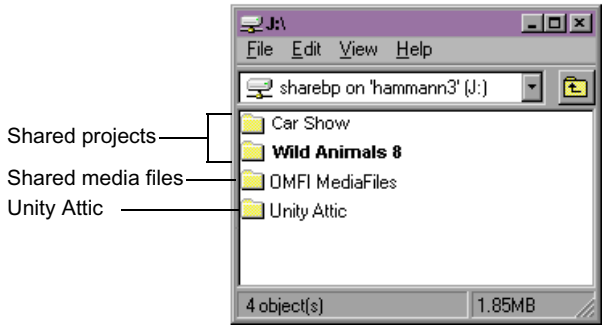
  The folder is similar to the folder created when you select New Folder from the Project Window Fast menu. For more information, see "Managing Folders and Bins" on page 45.
- Displays an extra column in the Project window that identifies the computer that has the bin locked.
- Uses bold text to identify bins that are locked by other users.
- Creates a folder at the top level of the shared workspace called Unity Attic. This folder contains backup files for each project on the shared volume.

Depending on the number of users sharing a workspace, you might want to increase the number of files that your Avid editing application stores in the Unity Attic folder (using the Bin Settings dialog box).

The following illustration shows the Project window for a shared project.



The following illustration shows the contents of a shared workspace at the desktop level.



Opening a Shared Project

To open an existing project on the shared volume:

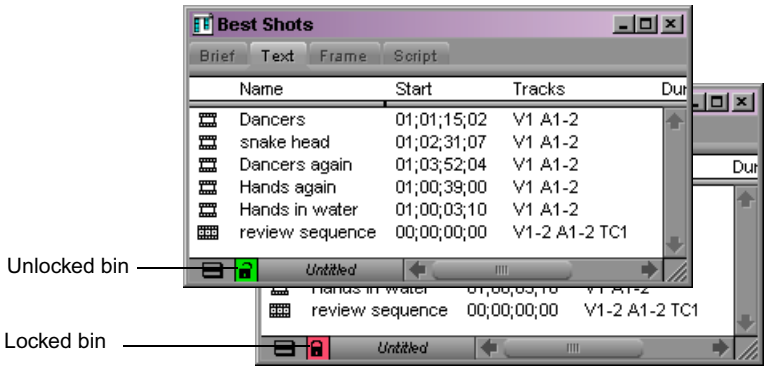
1. Start your Avid editing application.
2. In the Select Project dialog box, navigate to the project on Avid Unity.

   The Project window opens. For a description of the elements specific to Avid Unity in the Project window, see “Sharing Methods” on page 67.

3. Open one of the bins by double-clicking the Bin icon.

   The bin appears with a Bin Lock Status button. You can click the red (locked) or green (unlocked) Bin Lock Status button to view a history file that shows which computers and users have modified the bin and the date and time of the modifications.

   The following illustration shows locked and unlocked bins.



When a bin is unlocked, you have permission to make changes. You should not make changes to a locked bin. See "Restrictions and Limitations for Locked Bins" on page 71.

The Bin Lock Status button does not appear if the bin is not on Avid Unity.

Working with Locks

Your Avid editing application uses a locking mechanism to help you keep track of who is currently working in a shared bin. This allows one user to write to a bin; multiple users can read the files in that bin.

Default Locking Mechanism

The user who opens the bin first gets the lock and obtains write access to the bin. Your Avid editing application uses bold text in the Project window to identify bins that are locked by another user. When the person who owns the lock closes the bin, it becomes available for another user to open and take the lock.

If one user has the lock and another user has the same bin open, when the first user closes the bin, the second user must close and reopen the bin to get the lock.

You can click the red or green Bin Lock Status button in the bin to view a history file that shows which computers and users have modified the bin.

To open a bin without taking the lock:

- Alt+double-click (Windows) or Option+double-click (Macintosh) the bin in the Project window.

Overriding the Default Locking Mechanism

You can instruct your Avid editing application to keep a bin locked even after you close it.

To permanently lock a bin:

1. Select one or more bins in the Project window.
2. Right-click (Windows) or Ctrl+Shift+click (Macintosh) the Bin icon, and select Lock Project Bin.

   An asterisk (Windows) or diamond (Macintosh) appears next to the user name in the Project window. In this case, the bin remains locked even after you close it.

To unlock the bin:

- Right-click (Windows) or Ctrl+Shift+click (Macintosh) the bin in the Project window, and select Unlock Project Bin.

The Lock Project Bin and Unlock Project Bin commands are also available from the Clip menu.

Restrictions and Limitations for Locked Bins

The following restrictions apply to bins that are locked by another user:

- You cannot select a locked bin for operations such as capture, title creation, and importing. This helps to minimize the problems of modifying a locked bin.
- You cannot drag an item to a locked bin.
- If you drag an item from a locked bin to a writable bin, the Avid system creates a duplicate (not a copy) of the selection in the writable bin. The original item is not removed from the locked bin. This operation is the equivalent of duplicating a selection and then dragging the duplicate to another bin.
- You cannot move a bin that is locked by another user.
- If you modify a locked bin, your Avid editing application does not let you save the bin to the same name, but it allows you to save the bin to another name. However, this causes duplicate bin IDs and might cause system-level conflicts with the contents of the two bins. The application sees the duplicate contents of these bins and resolves the conflicts by newest modifications (this might not be desirable behavior).

Try to avoid creating duplicate bins by modifying a locked bin. If you do create a duplicate bin in this way, you should manually merge the changes into the original bin and delete the duplicate bin.

The lock does not prevent you from deleting the media in a locked bin if you have write access to the workspace. It ensures only that you don't overwrite changes to the bin.

Suggestions for Improving Performance When Working with Shared Bins

The following information is provided to improve performance when working with shared bins in an Avid Unity environment.

- Do *not* use the same name for your editing system machine name and your user name. In fact, do not use the same name for security objects such as machine names, user names, group names, and domain names. If any two security objects have the same name, Windows might become confused and sharing might not work properly.
- Do *not* use the same prefix for machine names in a shared environment. **No full name can be a prefix of another name.** If one of the systems has a machine name that is the full name, and others in the environment have the prefix as part of their machine name, problems can occur. For example, if an editing system has a machine name ABC and additional editing systems in the shared environment have machine names ABCnn, ABCxx, the following problems could occur:
  - When the system with the machine name ABC is writing to a directory, the systems whose machine names have the same prefix (ABCnn and ABCxx) might not be able to access the directory.
  - When the system with the machine name ABC is rendering, systems whose machine names have the same prefix (ABCnn and ABCxx) might be unable to launch.

    Avid recommends that you do not use a common prefix for machine names. If you must use a common prefix, make sure all the names are the same length (ABC01, ABC02, ABC03, etc.).
- Avoid using Windows Explorer to examine, copy, or manipulate shared bin files or shared project folders or their contents when editors are using those files or folders. If you do, editors attempting to access those shared bins or projects may experience delays accompanied by a progress dialog that says, "Filesystem busy, retrying (MESSAGE)," where MESSAGE is replaced by a specific message identifying the action that is being retried.

  If the busy condition persists, and the retries are exhausted, a failure message appears. When that happens, ensure that Windows Explorer is not being used on the shared bins you are trying to access, and then try the operation again.

- When you have an environment where more than five users are sharing bins on Avid Unity, Avid recommends using an Avid Interplay server in the workgroup environment.
- When an Avid Interplay server is available in an Avid Unity system in the workgroup environment, Avid does *not* recommend sharing bins or projects. Use the Avid Interplay server and the Remote Assets feature to share media. All editing systems in a workgroup environment that includes an Avid Interplay server must have the Avid Unity client software installed. The Media Tool might become unreliable if an editor in the Avid Unity workgroup environment does not have the Avid Unity client software installed.

Shared Bin and Project Limitations

If an editor other than the creator deletes a media file, other editors cannot see that media file go offline immediately. If an editor tries to play that file, “media file not found” messages might appear in a monitor window, and access violation errors might occur.

Each editing application maintains a PMR file in its machine name folder inside the OMFI MediaFiles folder or the Avid MediaFiles folder. The PMR file lists all the online media files. Every editing application consults all the PMR files in all the machine name folders to find out which media files are online. Whenever a media file is created, its name is immediately added to the creating editor application's PMR file, and whenever a media file is deleted by its creator, its name is immediately removed from the PMR file.

However, if an editing application other than the creator deletes a media file, the PMR file that contains the deleted file is NOT updated immediately. Once the creating editor encounters an event that causes its PMR to be updated, then all editing systems know that the deleted media file has gone offline.

There are several ways to force an editing application to update its PMR. The simplest is to switch to the desktop and back.

Avid recommends that you institute policies where media files are deleted by the editor who created them, or if necessary, the deleting editors notify the editor who created the media files that a deletion has occurred. This editor can then switch to the desktop and back, and all other editors can see the deleted file go offline.

Shared Bin Lock Icon Limitation

Occasionally, when two editors attempt to open a shared bin at the same time, both editors get the green lock icon. However, only one editor really has the lock, and that editor's machine name appears beside the bin name in both Project windows.

Both editors can modify their copies of the bin, but only the editor that holds the lock, as indicated in the Project window, can save that bin. The other editor is warned that the bin is locked but is allowed to save a copy of the changed bin.

Avid recommends that you use the “Save Bin Copy As...” button and continue working.

Drive Filtering in Networked Workflows

The Drive Filtering and Indexing tab of the Media Creation Settings dialog box includes three options:

- Filter by Resolution
- Filter by System Drive
- Filter by Launch Drive

For Symphony Nitris and for current versions of Avid Media Composer and Avid NewsCutter® products, these three options are selected by default. Some older versions of Avid Media Composer and Avid NewsCutter® products shipped with Filter by Resolution enabled, Filter by System Drive disabled, Filter by Launch Drive disabled. This caused breakages with the networked workflows as media in new projects were being created on the C: drive instead of the shared storage when using the default Media Creation Settings. To fix this, all three drive filtering options are enabled by default.

Avid Xpress products and Avid Free DV default to Filtering off because these products might not have additional drives available, especially if you are working on a laptop.

Any project brought into a networked workflow that was created with any of the filtering selections off might have problems with networked media creation, such as “Audio and/or Video Mixdown” and “SendToPlayback,” because their Media Creation Settings are still configured for standalone usage.

There are several ways for you to work around this issue. First, adjust the drive filtering settings when switching environments, either by opening the Media Creation Setting and switching the drive filtering settings or by creating multiple Media Creation Settings and switching the active setting whenever you shift environments. If you always work in an environment that differs from the defaults (for example, an Avid Xpress product always connected to shared storage), you can create a Media Creation setting that fits your workflow and add it to your Site Settings so new projects are created with the desired defaults. For more information, see “Using Site Settings” on page 622.

The default values for Filter by Resolution, Filter by System Drive, and Filter by Launch Drive are as follows:

Drive Filtering Default Values

Product	Filter By Resolution	Filter by System Drive	Filter by Launch Drive
Symphony Nitris	Yes	Yes	Yes
Media Composer products	Yes	Yes	Yes
NewsCutter products	Yes	Yes	Yes
Media Station PT	Yes	Yes	Yes
Avid Xpress Pro	No	No	No
Avid Xpress DV	No	No	No
Free DV	No	No	No

Chapter 2

Using Tools

The Tools menu in your Avid editing application provides quick access to essential tools that you can use in your projects. In addition to the tools available from the Tools menu, you can also add a controller to your system that you can use as an alternative to your keyboard and mouse for editing footage. These tools are described in the following sections:

- Using the Tools Menu
- Using the Deck Controller
- Using the Command Palette
- Using the Avid Calculator
- Using the Console Window
- Using the Hardware Tool
- Using External Controllers as Editing Control Surfaces

Using the Tools Menu

You can open any of the most frequently used system tools from the Tools menu.

To open a tool:

- Select Tools > *tool name*.

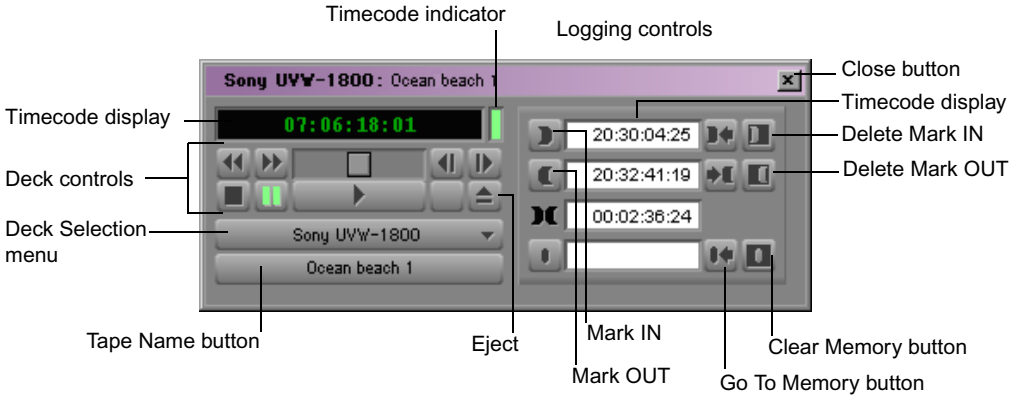
Using the Deck Controller

The deck controller provides direct serial or VLX*i*® V-LAN® control of an Avid-compatible tape deck at any time during editing. This allows you to cue and screen footage from source tapes in various edit modes or when recording a digital cut, without opening the Capture tool.

To open a deck controller:

- Select Tools > New Deck Controller.

The Avid Deck Manager program is initialized, and a new Deck Controller window opens.



Each deck controller includes the following elements:

- The Timecode display provides information about the control status of the tape deck, as follows:
  - If the deck is properly connected and power is on, the deck controller displays timecode when a tape is mounted.
  - If a deck is not properly connected to the system or power is off when you open the controller, the indicator displays the message “NO DECK.”
  - If you turn the deck power off with the deck controller already open, the indicator displays the message “Power Off.”
  - If you switch the deck control to Local on the VTR, the indicator displays the message “Local.”

Information on connecting decks and cabling varies depending on the Avid DNA device you use. See the appropriate “Connecting Peripheral Equipment” topic for your Avid DNA device in the Help, within the “Using the Avid Adrenaline,” “Using the Avid Mojo,” or “Using the Avid Mojo SDI” sections.

- The Timecode indicator flashes green during playback or capture to indicate that the system is receiving valid timecode from the source tape. If the indicator remains unlit, the system is not receiving timecode.
- The deck controls provide a standard range of playback capabilities, including fast forward and rewind, stop and play, step backward and step forward, pause, and eject.

- The Deck Selection menu allows you to specify a deck with deck control parameters that you can customize in the Deck Settings dialog box. For more information, see “Deck Configuration Settings” on page 652.
- The deck controller allows you to associate a tape name with the controller by clicking the Tape Name button and selecting a tape in the Select Tape dialog box. For more information, see “Selecting a Source Tape” in the Help.
- Logging controls allow you to log IN and OUT marks while cueing your tape.

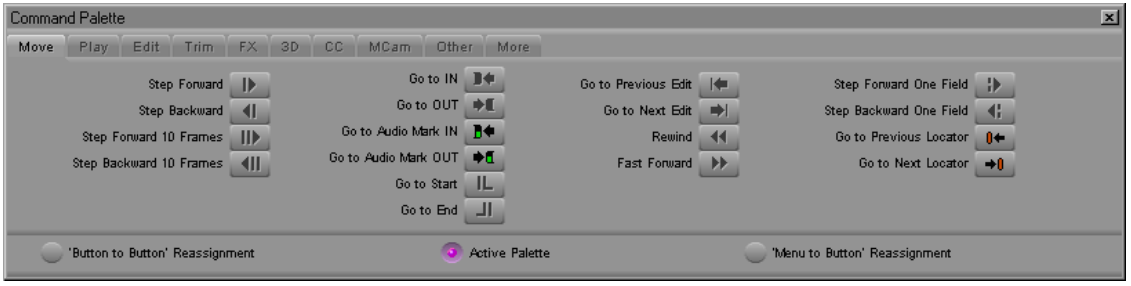
  For more information on logging, see “Logging Directly into a Bin” on page 112.

  Marks you set with the deck controller are temporary and allow you to return to timecode locations entered in the window while screening and cueing a tape. If the Capture tool is open, however, timecodes logged in the deck controller also appear in the Capture tool and can be entered into an open bin.

Using the Command Palette

The Command palette provides a central location for all *user-selectable buttons* that you can map to various locations for ease of use. User-selectable buttons allow you to perform a wide range of commands with a single click of the mouse.

The Command palette organizes buttons by editing function. Tabs are displayed for each editing function and the buttons that perform those functions are displayed in each tab. The functions are Move, Play, Edit, Trim, FX (Effects), 3D, CC (Color Correction), MCam (MultiCamera), Other, and More.



You can use the Command palette to:

- Map buttons to any Tool palette or the keyboard. See "Mapping User-Selectable Buttons" on page 81.
- Map menu commands to various buttons and keys. See "Mapping Menu Commands" on page 83.
- Directly activate a command. See "Activating Commands from the Command Palette" on page 84.

For information about each button in the Command palette, right-click (Windows) or Ctrl+Shift+click (Macintosh) a button and select What's This? from the menu.

For more information on logging with the Capture tool, see "Logging Directly into a Bin" on page 112.

Understanding Button Mapping

Mapping user-selectable buttons allows you to reconfigure Tool palettes, toolbars, or the keyboard in various combinations to suit different editing needs.

When you map buttons to the keyboard, the mapping might be specific to the current editing mode. For example, buttons mapped to the Page Up key or the Page Down key revert to the default key functions when you enter Effect mode. After you exit Effect mode, the keys return to the mapped function.

The following are a few examples of mapping buttons:

- **Subcataloging clips:** You can map the Make Subclip button and other clip management buttons.

Make Subclip Find Bin Add Locator

- **Complex layering and effects editing:** You can map buttons such as Motion Effect, Remove Effect, Transition Corner Display, Fade Effect, Render Effect, Cycle Picture/Sound, Quick Transition, and Grid (which displays Safe Title overlays).

Motion Effect Remove Effect Transition Corner Display

Fade Effect Render Effect Cycle Picture/Sound

Quick Transition Grid

- **MultiCamera editing:** You can map the Quad Split, Swap Cam Bank, and Gang buttons.

Quad Split Swap Cam Bank Gang

When you remap buttons or commands, the system immediately saves your new configuration in one of the default settings that you can open from the Project window. You can also save, rename, and recall multiple versions of any of these settings to serve various purposes.

For more information on multiple settings, see "Working with Multiple Settings" on page 617.

Your Avid editing application saves button configurations as follows:

- Changes to the Keyboard palette are saved in the Keyboard settings.
- Changes to the pop-up monitor Tool palette and Tool palette in the Composer window are saved with the Composer settings.
- Changes to Command palettes in Trim mode are saved with Trim settings.
- Changes to the Tool palette are saved in the Interface settings.

You can change the appearance of the buttons in the Tool palette by using the Interface settings from the Settings list in the Project window. For more information, see "Customizing the Appearance of the Avid User Interface" on page 56. You can choose to identify a button's function with only an icon or with an icon and letters. For more information, see "Interface Settings" on page 703.

Mapping User-Selectable Buttons

To map buttons or keys on the keyboard by using the Command palette:

1. Open a window that has a user-selectable button palette by doing one of the following:
   - Activate the Playback, Source, or Record monitor in the Composer window.
   - Click a Fast Menu button, and drag the Tool palette to open it.
   - Activate the Source/Record monitor or the pop-up monitor, click the Fast Menu button, and drag to tear off the Tool palette.
   - Open a clip in a pop-up monitor.
   - Enter Trim mode in the Composer window.
   - Open the Keyboard palette from the Settings list in the Project window.

2. Select Tools > Command Palette.

   The Command palette opens.

3. Select Button to Button Reassignment at the bottom of the Command palette.
4. Click the tab from which you want to select a user-selectable button.
5. Drag the button from the Command palette to a button location on the other palette.

Using the Blank Button

The Blank button in the Other tab of the Command palette allows you to replace a defined button with an undefined button. If you do not need a specific button on the Tool palette, you can replace this button with a Blank button.

For more information on mapping the Blank button to a new location, see "Mapping User-Selectable Buttons" on page 81.

Mapping Modifier Keys

You can add modifier keys to functions already associated with keys and buttons. The Other tab in the Command palette contains the following modifier key buttons:

Button	Description
	(Windows) Add Alt Key button
	(Macintosh) Add Control Key button
	(Macintosh) Add Option Key button

For example, on a Windows system, if you map the Add Alt Key button to the Mark IN key (I key), the function of the I key changes to Go to IN Point (which is equivalent to pressing Alt+I). For a list of other functions that use modifier keys, select Help > Shortcuts.

After you modify a key or button with a modifier key button, you can use the default function of the key or button by pressing and holding the appropriate modifier key while pressing the key, or by pressing and holding the modifier key while clicking the button.

Mapping Menu Commands

You can map menu commands displayed in the menus in your Avid editing application menu bar directly onto any mappable button location or onto the keyboard. In some cases, you can avoid using the menus altogether.

Before you can map some commands, you must first establish the condition that enables the command. For example, before you can map the Render In/Out command from the Clip menu, you must first mark IN and OUT points in the Timeline so that the menu command appears.

To map menu commands:

1. Open a window that has user-selectable buttons by doing one of the following:
   - Activate a monitor in the Composer window.
   - Click a Fast Menu button, and drag the Tool palette to open it.
   - Open a clip in a pop-up monitor.
   - Enter Trim mode in the Composer window.
   - Open the Keyboard palette from the Settings list in the Project window.
2. Select Tools > Command Palette.

   The Command palette opens.
3. Select Menu to Button Reassignment.
4. Click a target button in the Keyboard palette or other palette (for example, the Command palette under a monitor).

   The pointer changes to a small white menu.
5. Select the menu command you want to map to the target button.

   The initials for the menu command appear on the target button.

Activating Commands from the Command Palette

You can perform a command function directly from the Command palette. For example, you can click the Play button in the Command palette to play the material in the Source monitor.

To activate a command from the Command palette:

1. Select Tools > Command Palette.

   The Command palette opens.
2. Select Active Palette at the bottom of the Command palette.
3. Click the tab from which you want to select a command function.
4. Click the button in the Command palette for the function you want to perform.

Using the Avid Calculator

The Avid Calculator helps you calculate video and film durations, and convert timecode and film key numbers to different formats.

For example, you can:

- Convert drop-frame to non-drop-frame timecode values.
- Convert timecode durations between 30-fps and 25-fps projects.
- Convert a duration in video to the corresponding length in footage and frames for measuring 35mm film.

To use the Avid Calculator:

1. Select Tools > Calculator.

   The Avid Calculator opens.
2. Click the Format menu, and select a format.
3. Make calculations in one of the following ways:
   - Click numbers and functions in the Avid Calculator.
   - Enter numbers and functions using the numeric keypad.
   - Enter numbers and functions using the top row of numbers on the keyboard.

   You do not need to enter leading zeros, colons, or semicolons for timecode.

To convert your totals at any time to another format:

- Click the Format menu, and select a different frame code or key number format.

If drop-frame timecode is entered into the calculator while non-drop-frame timecode is selected in the format menu, the calculator converts the entered timecode to a non-drop-frame equivalent (and vice-versa).

Using the Console Window

The Console window provides a number of features, including:

- Current system information, including your system ID number
- A log of error messages
- Detailed information about sequence segments in the Timeline or about objects in a bin
- A command to display networked drives for use as media drives
- Information after you capture or import

Do not use the programming features of the Console without guidance from Avid professionals. Contact your Avid Reseller with specific questions. (In North America, you can contact Avid Customer Support.)

Displaying System Information

To display current system information:

1. Select Tools > Console.

   The Console window opens.

2. Scroll in the Console window to view your system information and ID.

   Your system ID is on a line beginning `System ID:`

This feature is especially useful for finding the system ID when you need to contact your Avid Reseller or Avid Customer Support.

Reviewing a Log of Errors

To review errors logged to the Console window:

1. When an error occurs, close the message box and select Tools > Console.
2. Scroll through the Console window to find a log of the error to use when you contact your Avid Reseller or Avid Customer Support.

Getting Information with the Console

The Console window provides quick access to bin information such as total duration of selected clips or total items in a bin including hidden items. You can also use the Console window to display information about a clip, segment, or sequence in the Timeline.

To get information with the Console window:

1. Select Tools > Console.

   The Console window opens.

2. Select the item about which you want information, for example:

   - In the Timeline, move the position indicator to the selected clip or segment.
   - In the bin, select an object or Ctrl+click (Windows) or Shift+click (Macintosh) multiple objects.

3. Select File > Get Bin Info or File > Get Position Info.

   Information about the clip appears in the Console window.

Using the Console Window to Access Network Drives

Your Avid editing application can access network drives that you have mapped to your Avid editing system. Once your network drives are mapped, typing the appropriate console command displays the mapped drive letter in the appropriate tools in the Avid editing application.

For information about mapping dives to your computer, see your Windows or Macintosh documentation.You do not need to use this feature to access Avid Unity shared network drives.

When the feature is turned on, the mapped drive letter appears in the Target Drive menu. When you turn the feature off, the mapped drive letter is dimmed. If you quit and restart your application, the mapped drive letter does not appear in the Target Drive menu.

To make your mapped network drives available:

1. Open the Console window by selecting Tools > Console.
2. In the Console command line, type:

   ```
   alldrives 1
   ```

3. Press Enter (Windows) or Return (Macintosh).

   Network drives are now visible in your Avid editing application.

Typing `alldrives` *in the console window turns this feature on and off. Typing* `alldrives 2` *restores the default behavior where only media drives are available.*

By default, network drives are filtered by resolution when the option Filter Network Drives Based on Resolution option is selected in the Media Creation settings. For more information, see “Media Creation Settings” on page 709.

Using the Hardware Tool

The Hardware tool provides the following information about the system’s hardware configuration:

- The Drives tab lists each online drive. The shaded portion of the bar graph to the right of each drive shows the amount of storage space currently filled. The number in the bar graph indicates the amount of available drive storage space for each drive.

If your system is connected to an Avid Unity network, you see two drives tabs, Local Drives and Avid Unity Drives.

- (Windows) The System tab lists the operating system, its version, service pack, and build, and the physical memory.
- (Macintosh) The System tab lists the operating system, its version, and the physical memory.

To check the hardware configuration of your Avid system, do one of the following:

- Select Tools > Hardware.
- Click the Info tab in the Project window, and then click Hardware.

  The Hardware tool opens.

Using External Controllers as Editing Control Surfaces

Adding a controller to your Avid system provides an alternative to using the keyboard and mouse for editing footage. Avid supports the following controllers for this purpose:

- Digidesign Command|8™
- Digidesign Digi 002® (Windows only)

For information about connecting these controllers, see “Connecting Serial and MIDI Port Devices” in the Help. For information about configuring these controllers and using them as editing control surfaces, see “Using the Digi 002 and Command|8” on page 407.

Chapter 3
Logging: Advanced

When you import shot log files or log directly into a bin, you provide your Avid editing application with frame-accurate clip information used to capture the source footage. The logs you create form the foundation for organizing, tracking, storing, retrieving, and generating lists of edit information throughout your project. The following topics provide advanced information for preparing log information:

- Preparing Log Files for Import
- Understanding Avid Log Specifications
- Creating Avid Logs
- Double-Checking Log Files
- Transferring Bins from MediaLog
- Logging Directly into a Bin
- Setting the Pulldown Phase
- Logging Film Information
- Modifying Clip Information Before Capturing
- Exporting Shot Log Files

For more information, see “Importing Shot Log Files” in the Help or the Basics Guide for your Avid editing application.

Preparing Log Files for Import

Log files need to conform to the Avid Log Exchange (ALE) format to be imported into your Avid editing application. You can use the ALE utility included with your system to quickly convert shot log files.

The ALE utility allows you to:

- Modify the text in a log file (Windows only).
- Convert log files of different formats to ALE files. See "Compatible Log Formats" on page 97.
- Convert an ALE file to either an ATN or FLX file.

Any options you set in the ALE utility are saved each time you close the ALE utility.

When you are converting an ATN file that contains multiple sections to an ALE file, multiple ALE files are created. The Avid Log Exchange window displays only the first ALE file created. The succeeding ALE files are given the same file name with incremental numbering. For example, the file Nations1.atn is converted to Nations001.ale, Nations002.ale, Nations003.ale, and so on. The converted output files are stored in the folder containing the original input file.

Converting Log Files with Avid Log Exchange (Windows)

To convert a log file to an ALE file:

1. Click the Start button, and select All Programs > Avid > Avid Log Exchange.

   The Avid Log Exchange window opens.

2. Do one of the following:

   - If the log file is a Final Cut Pro®, Cinema Tools™, or a Tabbed shot log file, select File > Import > *file type*.
   - If the log file is another file type, such as .flx or .atn, select File > Open.

   The Open dialog box opens.

3. Double-click the file you want to convert.

   The Import Header Options dialog box opens.

4. Select the information you want to appear in the global settings of the .ale file. The global settings appear at the top of the .ale file.

5. Click OK.

6. Depending on the type of file you are opening, one of the following occurs:
   - If the file type is recognized by the ALE utility, the file appears in the Avid Log Exchange window.
   - If the file does not contain the Windows line-ending format, then the Line Endings dialog box opens. Select an option from the following table.

Option	Description
Display & Save	Opens the file in the Avid Log Exchange window and changes the file to the Windows format.
Display Only	Opens the file in the Avid Log Exchange window, but does not change the file.
Ignore	Displays the file as is without changes.

   The file appears in the Avid Log Exchange window.
   - If the file type is not recognized, the Select File Type dialog box opens. Select the type of file you are converting and click OK.

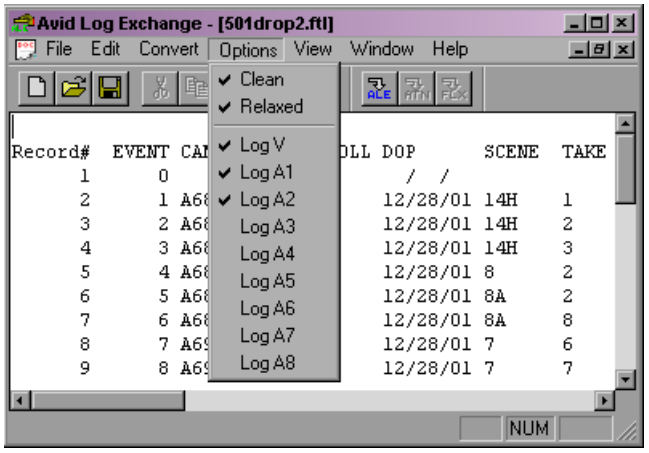
     The file appears in the Avid Log Exchange window.

For specific information on the various file types, see "Compatible Log Formats" on page 97.

7. Use the Options menu to select the tracks to include in the Tracks column of the log. The default track selections are Log V, Log A1, and Log A2.

   After you import the log into an Avid bin, the system captures all tracks shown in this column when batch capturing.

The Track selection only works on non-ALE files being converted to ALE format. When ALE is the incoming format, Track selection does not work.



8. Select Options > Clean if you want ALE to clean the ALE output file to eliminate overlapping timecodes for clips. By default, Clean is selected.

   When you select Clean, the utility changes the end timecode of a previous event to be less than that of the following event.

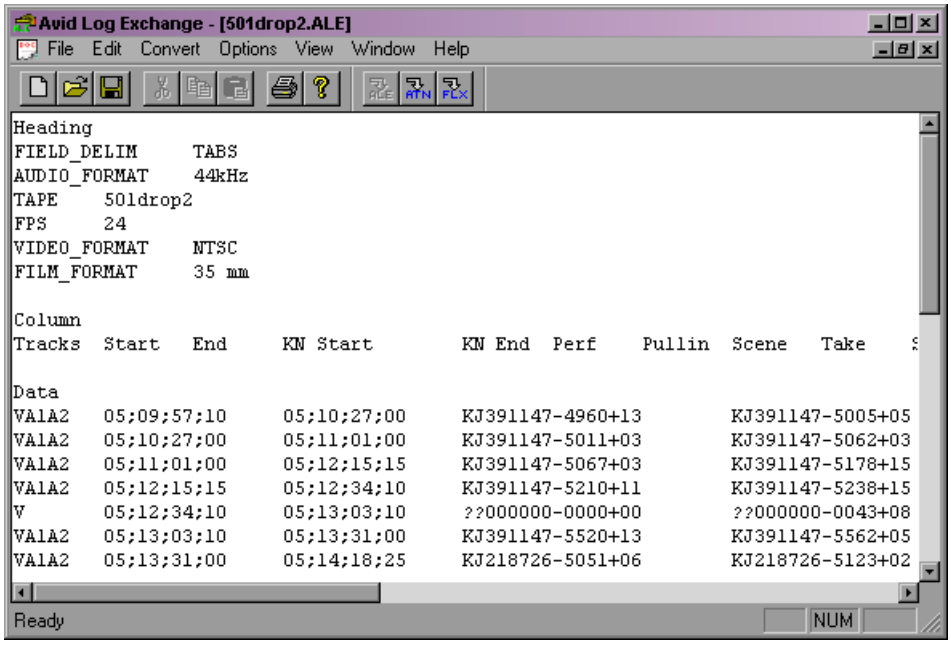
9. If you selected Clean, you can also select Options > Relaxed to prevent the deleting of events that come earlier in the transfer. Relaxed is not set by default.

   For example, if you transfer film footage with a timecode of 2:00:00:00 and then add some clips at the end with a timecode of 1:00:00:00, Relaxed prevents the deleting of events that come earlier in the transfer. This occurs when you shoot footage across the midnight hour, the first half of the film has 24 hours, and the second half has 0 hours.

10. Select Convert > ALE.

    The default output selection is the ALE format. This is the required format for import into an Avid bin.

    The Avid Log Exchange window displays the converted ALE file. The converted file has the same file name as the original file, except the file name extension matches the converted file format.



11. (Option) Select the original file from the Window menu if you want to convert the file again using different options.
12. Select File > Close.

    If you made changes in the editor, a message box opens.
13. Click Yes.

    The converted file is stored in the same folder as the original log file.

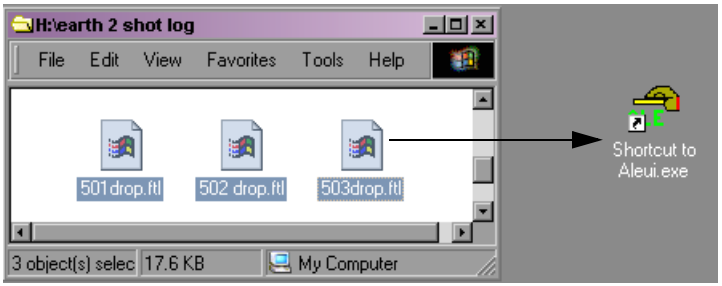
Using Drag-and-Drop Conversion for Log Files (Windows)

Use this shortcut to convert files into an ALE file.

If the log file is a Final Cut Pro, Cinema Tools, or a Tabbed shot log file, you cannot use drag-and-drop conversion. Use the procedure in "Converting Log Files with Avid Log Exchange (Windows)" on page 90 to convert files of this type.

To convert a log file by using drag-and-drop conversion:

1. Check the options that are set in the ALE utility. See "Converting Log Files with Avid Log Exchange (Windows)" on page 90. The current options are used when you perform drag-and-drop conversion.
2. Create a shortcut for the ALE utility.
3. Open the folder that contains the files you want to convert, positioning the folder so the Shortcut icon for the ALE utility is visible.
4. Select the files you want to convert.



5. Drag the selected files to the Shortcut icon for the ALE utility, and release the mouse button.
6. Depending on the type of files you are converting, one of the following occurs:
   - If the file type is recognized by the ALE utility, a message box opens, indicating the conversion was successful.
   - If the file type is not recognized, the Select File Type dialog box opens. Select the type of file you are converting and click OK.

     A message box opens, indicating the conversion was successful.
   - If the file type is an ALE file, the ALE Convert Type dialog box opens. Select a file type for the converted output file and click OK.

     A message box opens, indicating the conversion was successful.
7. Click OK to close the message box.

   The converted files have the same file names as the original files, except the file name extension matches the converted file format.

   For example, the .ale file name extension is added to the new file names for the Avid format. The converted files are stored in the folder containing the original log files.

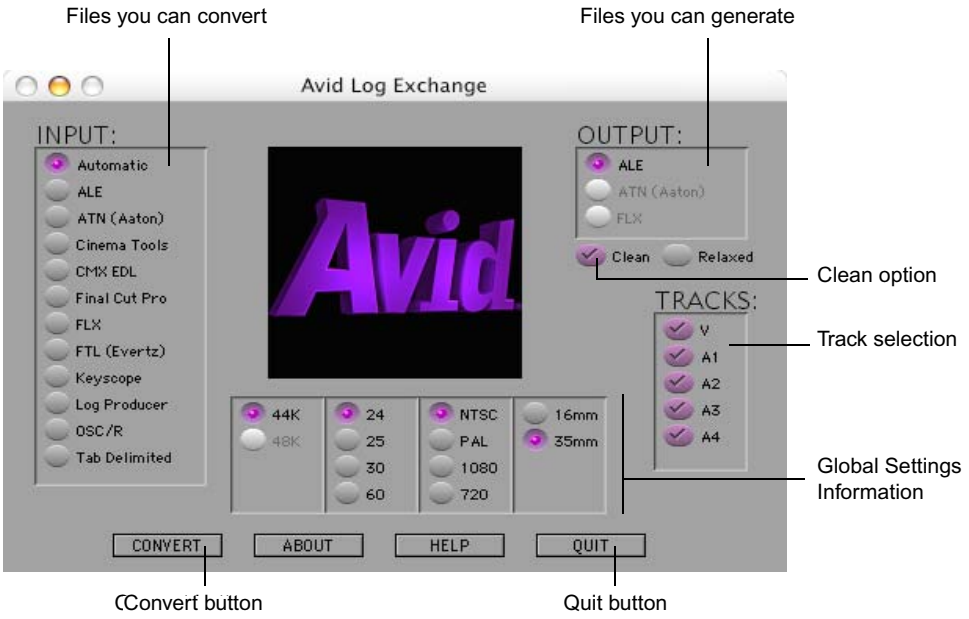
Converting Log Files with Avid Log Exchange (Macintosh)

You can use the ALE utility included with your system to quickly convert shot logs that are created during a film-to-tape transfer.

To convert a log file to an ALE file:

1. Select Go > Applications, open the ALE folder, and double-click the ALE icon.

   The Avid Log Exchange dialog box opens.



2. Select the type of file you want to convert from the Input list.

   If you are not sure of the type of file, select the Automatic option. ALE will determine the type of file based on the file name.

For a list of supported file types, see Compatible Log Formats.

3. Select the type of file you want to create from the Output list.

   The default output selection is the Avid Log Exchange (.ale) format. This is the required format for import into an Avid bin.

4. Select the tracks to include in the Tracks column of the log. After you import the log into an Avid bin, the system captures all tracks shown in this column when batch capturing.

The Track selection only works on non ALE files being converted to ALE format. When ALE is the incoming format, Track selection does not work.

5. Select the option if you want ALE to clean the ALE output file to eliminate overlapping timecodes for clips.

   When you select Clean, the utility changes the end timecode of a previous event to be less than the following event.

6. If you selected the Clean option, you can also select the Relaxed option to prevent the deleting of events that come earlier in the transfer. Relaxed is not set by default.

   For example, if you transfer film footage with a timecode of 2:00:00:00 and then add some clips at the end with a timecode of 1:00:00:00, Relaxed prevents the deleting of events that come earlier in the transfer. This occurs when you shoot footage across the midnight hour and the first half of the film has 24 hours and the second half has 0 hours.

7. Select the global settings information, for example, NTSC or PAL, that you want to appear in the ALE file. Global settings appear at the top of the .ale file.

8. Click the Convert button to open the Select File To Convert dialog box.

9. Open the drive and folder that contain the files you want to convert.

10. Double-click the input file name.

    If you selected a file type, ALE converts the file immediately.

    If you selected the Automatic option, a message box opens and asks you to confirm the file type.

11. Click the button for the selected file type.

    A message box opens.

12. Do one of the following:

    - Click the This File Only button to convert only the file you selected to the format you selected.
    - Click the All Files button to convert all files you select in this session to the format you selected. If you click All Files, the message boxes will not open the next time you double-click a file.

    ALE stores the converted file in the same folder as the original input file.

The original file name extension is replaced by the extension for the new format. The .ale files can be imported only into Avid products.

Using Drag-and-Drop Conversion for Log Files (Macintosh)

If the log file is a Final Cut Pro, Cinema Tools, or a Tab Delimited shot log file, you cannot use drag-and-drop conversion. Use the procedure in "Converting Log Files with Avid Log Exchange (Macintosh)" on page 95) to convert files of this type.

To convert a log file by using drag-and-drop conversion:

1. Check the options that are set in the ALE utility. See "Converting Log Files with Avid Log Exchange (Macintosh)" on page 95. The current options are used when you perform drag-and-drop conversion.
2. Navigate to and then open the folder that contains the Avid Log Exchange icon.
3. Open the folder that contains the files you want to convert, positioning the folder so the Avid Log Exchange icon is visible.
4. Select the files you want to convert.
5. Drag the selected files to the Avid Log Exchange icon, and release the mouse button.

   The system converts the files to Avid format, adding the .ale file name extension to the new file names.

Compatible Log Formats

The following table lists the log formats that can be imported directly or converted for import using Avid Log Exchange (ALE).

Compatible Log Formats

Log Format	Requirements	File Name Extension
AatonBase	Conversion required	.atn or .atl
Avid Log	Import directly	.ale
Cinema Tools	Conversion required	.txt
CMX EDL	Conversion required	.cmx
Evertz®	Conversion required	.ftl
Excalibur	Conversion required	.ale or .flx
Final Cut Pro	Conversion required	.txt
FLEx™	Conversion required	.flx
Keyscope	Conversion required	.ksl

Compatible Log Formats (Continued)

Log Format	Requirements	File Name Extension
Log Producer™	Conversion required	.llp
Log right	Import directly	.ale
OSC/R (Macintosh® only)	Conversion required	.asc
OLE (Windows only)	Conversion required	.odb
Shotlister	Import directly	.ale
Tab Delimited	Conversion required	.txt

Understanding Avid Log Specifications

You can prepare an Avid log on any Windows or Macintosh computer by using a word processing application or a text editor. You can use the file name extension .txt, but it is not required.

To ensure accuracy, you must follow the Avid log specifications described in this section.

An Avid log is composed of three sections, in this order:

- Global headings
- Standard and custom column headings
- Data headings

When you create an Avid log, you must follow the order precisely. The tables in these topics follow this order.

For an example of a simple log file, see “Sample Avid Log” on page 108.

Avid Log Specifications

The following topics contain tables that show how to enter headings and data to create an Avid log.

The tables use the following conventions:

- A heading appears in the first column, without angled brackets or square brackets. For example, FIELD_DELIM is the first global heading.
- A <supported value> is surrounded by angled brackets. <Alternative supported values> appear underneath, also in angled brackets. You must enter one of these values. For example, **<29.97>** is one of the supported values for the FPS heading; to specify that value, type `29.97`.
- *A <variable data value>* is also surrounded by angled brackets, but it is italicized. For example, ***<timecode>*** is the data entry for the Start heading; type the correct timecode, in the format `08:19:10:00` (or `08;19;10;00`, for drop-frame timecode).
- [Tab] and [Enter] (Windows) or [Return] (Macintosh) keys are surrounded by standard brackets.
- A column contains the word “Required” if the heading must be included in the log.
- The final column contains notes about the heading or values.

You can decide not to display a defined heading (including a required heading), except for *Name*. *Name* must always be displayed.

The maximum number of combined global, standard, and custom headings in a log file is 64.

Global Headings

The global headings must come first in an Avid log file, and you must enter one value for each heading.

The following table shows the format for the global headings and the supported values for each heading.

Avid Log Global Headings

GLOBAL HEADINGS: Global headings are case sensitive and must be spelled exactly as shown. Include all required headings. Other headings are optional but might be necessary for your project. The maximum number of combined global, standard, and custom headings in a log file is 64.					
Heading			[Enter] or [Return]	Required	This marks the start of the global headings.
FIELD_DELIM	[Tab]	<TABS>	[Enter] or [Return]	Required	Enter TABS to show that the file is Tab delimited.
VIDEO_FORMAT	[Tab]	<NTSC> <PAL>	[Enter] or [Return]	Required	
FILM_FORMAT	[Tab]	<16mm> <35mm,3perf> <35mm,4perf>	[Enter] or [Return]		
AUDIO_FORMAT	[Tab]	<22kHz> <24kHz> <44kHz> <48kHz>	[Enter] or [Return]		Audio sampling rate for digitizing. You can override this for individual clips.
TAPE	[Tab]	<*tape name*>	[Enter] or [Return]	Required	Name of the videotape reel you are logging. If you omit this heading, the file name becomes the global tape name. You can override this for individual clips.
FPS	[Tab]	<23.98> <24> <25> <29.97>	[Enter] or [Return]	Required	Capture rate is 23.98 fps (23.978 fps) for NTSC, 24 fps for NTSC or PAL, 25 fps for PAL, or 29.97 fps for NTSC.
			[Enter] or [Return]		Press Enter (Windows) or Return (Macintosh) a second time after entering the FPS value. This marks the end of the global headings.

Column Headings

The standard column headings appear after the global headings in the Avid log file.

You do not enter the data for a column heading along with the heading. You enter the data later, in a separate data section.

You must include the five required standard column headings; they are listed first in the following table.

You can create your own custom column headings. Enter them after the standard headings (see the last heading in the following table). To create a custom heading, substitute the custom heading name for <*Your_heading*>. You can create several custom headings, as long as the total of global, standard, and custom headings does not exceed 64.

Avid Log Column Headings

COLUMN HEADINGS: Column headings are case sensitive and must be spelled exactly as shown. Note that the first five headings are required. Other headings are optional but might be necessary for your project. This table lists only the column headings that are relevant to shot log files. Some data, such as Creation Date, is gathered by the system. The following table does not include headings for such data. The maximum number of combined global, standard, and custom headings in a log file is 64.			
Column	[Enter] or [Return]	Required	Indicates the start of the column headings.
Name	[Tab]	Required	Heading for clip name.
Tracks	[Tab]	Required	Heading for tracks you select for digitizing.
Start	[Tab]	Required	Heading for video timecode of sync point — the timecode IN for clip. From address track of video.
End	[Tab]	Required	Heading for timecode OUT for clip. From address track of video.
Audio	[Tab]		Heading for the audio resolution (sample rate). If omitted, the global entry for AUDIO_FORMAT applies.
Auxiliary Ink	[Tab]		Heading for a second ink number used for the clip.
Auxiliary TC1	[Tab]		Heading for auxiliary timecode.
Auxiliary TC2	[Tab]		Heading for auxiliary timecode.
Auxiliary TC3	[Tab]		Heading for auxiliary timecode.
Auxiliary TC4	[Tab]		Heading for auxiliary timecode.
Auxiliary TC5	[Tab]		Heading for auxiliary timecode.

Avid Log Column Headings (Continued)

Camera	[Tab]	Heading for the camera used to film this clip. This feature is used in multicamera shoots.
Camroll	[Tab]	Heading for the camera roll ID containing this clip.
Duration	[Tab]	Heading for timecode Start to timecode End, the length of the video clip.
FPS	[Tab]	Heading for video frames per second rate for digitizing the individual clip. If omitted, the global entry applies.
Film TC	[Tab]	Heading for the timecode used on the film.
Ink Number	[Tab]	Heading for the ink number used for the clip.
KN Duration	[Tab]	Heading for the length of the clip, expressed in feet and frames.
KN End	[Tab]	Heading for the ending key number for the clip.
KN Start	[Tab]	Heading for the starting key number for the clip.
Labroll	[Tab]	Heading for the lab roll ID for the clip. Lab rolls are a combination of several camera rolls.
Perf	[Tab]	Heading for the film-edge perforations format used for 3-perf projects.
Pullin	[Tab]	Heading for the telecine pulldown of the first frame of the clip (pulldown phase). Pullin can have the values A, B, C, or D.
Pullout	[Tab]	Heading for the telecine pulldown of the last frame of the clip (pulldown phase). Pullout can have the values A, B, C, or D.
Reel #	[Tab]	Heading for the source reel number.
Scene	[Tab]	Heading for the scene number of the clip.
Shoot date	[Tab]	Heading for the date the footage was shot.
Sound TC	[Tab]	Heading for Nagra timecode, Arri® code, and so on, at the sync point. Syncs with the Start timecode. Required if tracking the sync sound. Capture rate can be 25 or 30 fps.
Soundroll	[Tab]	Heading for sound roll ID for clip.
TC 24	[Tab]	Heading for 24-fps timecode.

Avid Log Column Headings (Continued)

TC 25P	[Tab]		Heading for 25-fps timecode with pulldown.
TC 25	[Tab]		Heading for 25-fps timecode.
TC 30	[Tab]		Heading for 30-fps timecode.
Take	[Tab]		Heading for take ID for clip.
Tape	[Tab]		Heading for source tape ID for the individual clip. If omitted, the global entry applies.
DESCRIPT	[Tab]		Heading for description of clip.
COMMENTS	[Tab]		Heading for comments about clip.
<*Your_heading*>	[Tab]		Add any category of information you want. Add as many headings as you want, but do not use more than a total of 64 global and column headings in the file. Press the Tab key between each heading. Do not press the Tab key after the last heading.
	[Enter] or [Return]	[Enter] or [Return]	Press [Enter] (Windows) or [Return] (Macintosh) twice (do not press Tab) after the last heading.

Data Entries

The data entries come after the Custom column headings. The following table shows the format for entering data. Enter a line of data in this format for every clip. Be sure to start the data section *for each clip* with the word **`Data`** [Enter] (Windows) or **`Data`** [Return] (Macintosh).

Avid Log Data Headings

DATA HEADINGS: The word Data marks the start of the data for each clip.			
Data	[Enter] or [Return]	Required	Enter the word Data to mark the start of the logged clip entries.
DATA FOR EACH CLIP: Enter a line of data for each clip. Enter the data so it aligns with its column heading. (The data that goes with the ninth column heading must be the ninth data entry.) Be sure to enter data for all the required values. To leave a data position unfilled, press the Tab key instead of typing data. Press Enter (Windows) or Return (Macintosh) at the end of each line.Your Avid system supports up to four audio tracks in imported and exported logs.			
<*clip name*>	[Tab]	Required	Under **Name** heading. Enter a clip identifier (32 characters maximum).
<V> <VA1> <VA2> <VA1A2> <A1A2> <A1> <A2>	[Tab]	Required	Under **Tracks** heading. Enter the tracks you want captured for the clip. Enter V for MOS takes. Enter A1, A2, or A1A2 for wild sound.
<*timecode*>	[Tab]	Required	Under **Start** heading. Enter the video timecode for the sync point, the first frame of the clip. Use colons for non-drop-frame (for example, 01:00:12:20). Use one or more semicolons for drop-frame (for example, 01;18;00;02).
<*timecode*>	[Tab]	Required	Under **End** heading. Enter the video timecode for the last frame of the clip.
<22kHz> <24kHz> <44kHz> <48kHz>	[Tab]		Under **Audio** heading. Enter the audio sampling rate for this clip only. If omitted, global entry applies.
<*inknumber*>	[Tab]		Under **Auxiliary Ink Number** heading. Identify a second ink number for the start of the clip.

Avid Log Data Headings (Continued)

<timecode>	[Tab]	Under **Auxiliary TC** heading. Enter a Nagra timecode, Arri code, and so on, for the sync point. Syncs with the Start timecode.
<camera ID>	[Tab]	Under **Camera** heading. Identify the camera, using letters or numbers. For multicamera shoots.
<camera roll ID>	[Tab]	Under **Camroll** heading. Identify the camera roll, using letters and numbers.
<timecode>	[Tab]	Under **Duration** heading. Enter the length of the video clip, Start to End.
<23.98> <24> <25> <29.97>	[Tab]	Under **FPS** heading. Enter the video capture rate for this clip only. If omitted, the global entry applies. Use 23.98 fps (23.978 fps) for NTSC, 24 fps for NTSC or PAL, 25 fps for PAL, or 29.97 fps for NTSC.
<timecode>	[Tab]	Under **Film TC** heading. Identify the timecode used for the film, usually at 24 fps.
<inknumber>	[Tab]	Under **Ink Number** heading. Identify the ink number for the start of the clip.
<keynumber>	[Tab]	Under **KN Start** heading. Identify the complete key number for the start of the clip, for example, KU 31 2636-8903&12.
<keynumber>	[Tab]	Under **KN End** heading. Identify the key number for the end of the clip. You need to identify only feet and frames, for example, 0342&07.
<keynumber>	[Tab]	Under **KN Duration** heading. Identify the length of the clip, in feet and frames.
<lab roll ID>	[Tab]	Under **Labroll** heading. Identify the lab roll, using letters and numbers.
<1> <2> <3>	[Tab]	Under **Perf** heading. Edit the perf for this clip only.
<A> <B> <X> (matchback only) <C> <D>	[Tab]	Under **Pullin** heading. Identify the telecine pulldown of the first frame of the clip (pulldown phase). NTSC only.

Avid Log Data Headings (Continued)

<A> <B> <X> (matchback only) <C> <D>	[Tab]	Under **Pullout** heading. Identify the telecine pulldown of the last frame of the clip. NTSC only.
<reel ID>	[Tab]	Under **Reel #** heading. Identify the reel, using numbers.
<scene ID>	[Tab]	Under **Scene** heading. Identify the scene, using letters and numbers.
<shoot date>	[Tab]	Under **Shoot Date** heading. Identify the date the footage was shot, in numbers or in letters and numbers.
<timecode>	[Tab]	Under **Sound TC** heading. Identify the sound timecode at the sync point. Syncs with the Start timecode.
<sound roll ID>	[Tab]	Under **Soundroll** heading. Identify the sound roll, using letters and numbers.
<timecode>	[Tab]	Under **TC 24** heading. Identify the start of the clip for 24p timecode.
<timecode>	[Tab]	Under **TC 25p** heading. Identify the start of the clip for 25p timecode (PAL pulldown).
<timecode>	[Tab]	Under **TC 25** heading. Identify the start of the clip for 25-fps timecode (PAL).
<timecode>	[Tab]	Under **TC 30** heading. Identify the start of the clip for 30-fps timecode.
<take ID>	[Tab]	Under **Take** heading. Identify the take, using letters and numbers.
<source tape ID>	[Tab]	Under **Tape** heading. Enter the source videotape ID for this clip only.
<clip description>	[Tab]	Under **DESCRIPT** heading. Describe the clip.
<clip comments>	[Tab]	Under **COMMENTS** heading. Comment on the clip.

Avid Log Data Headings (Continued)

<information>	[Tab]	Under the headings you created yourself, type the appropriate information.
	[Enter] or [Return]	Press Enter (Windows) or Return (Macintosh) after the last entry for the clip. Do not press Tab after the last entry for the clip.
Enter an additional line of data for each remaining clip.		

Sample Avid Log

This section contains a sample Avid log for an NTSC video project.

Formatting keys (such as [Tab] and [Enter] (Windows) or [Return] (Macintosh)) are shown in brackets.

Windows

```
Heading [Enter]
FIELD_DELIM [Tab] TABS [Enter]
VIDEO_FORMAT [Tab] NTSC [Enter]
AUDIO_FORMAT [Tab] 44kHz [Enter]
TAPE [Tab] 001 [Enter]
FPS [Tab] 29.97 [Enter]
[Enter]
Column [Enter]
Name [Tab] Tracks [Tab] Start [Tab] End [Enter]
[Enter]
Data [Enter]
CU Josh & Mary [Tab] V [Tab] 01:00:00:00 [Tab] 01:15:05:00 [Enter]
CU Josh [Tab] VA1 [Tab] 01:15:06:00 [Tab] 01:20:00:00 [Enter]
```

Macintosh

```
Heading [Return]
FIELD_DELIM [Tab] TABS [Return]
VIDEO_FORMAT [Tab] NTSC [Return]
AUDIO_FORMAT [Tab] 44kHz [Return]
TAPE [Tab] 001 [Return]
FPS [Tab] 29.97 [Return]
[Return]
Column [Return]
Name [Tab] Tracks [Tab] Start [Tab] End [Return]
[Return]
Data [Return]
CU Josh & Mary [Tab] V [Tab] 01:00:00:00 [Tab] 01:15:05:00 [Return]
CU Josh [Tab] VA1 [Tab] 01:15:06:00 [Tab] 01:20:00:00 [Return]
```

Creating Avid Logs

You can use any word processing application or text editor to create Avid logs. However, you must save the file as a text document (ASCII format).

Windows systems ship with a text editor called WordPad.

To open WordPad:

- Click the Start button, and select All Programs > Accessories > WordPad.

Mac OS® X systems ship with a text editor called TextEdit.

To open Text Edit:

- Select Go > Applications, and double-click TextEdit.

To create a text document in TextEdit:

- Select Format > Make Plain Text.

When logging manually, you should do the following:

- Identify the source tape for each shot.
- Document each clip's name, start timecode, and end timecode.
- In the case of NTSC transfer tapes for film projects, you must supply pulldown information in the Pullin column of the bin before you can capture.

This is the minimum information required to capture successfully. You can also add other information such as comments, auxiliary timecodes, or key numbers for film projects. You can make a separate log file for each videotape, or log clips from several different videotapes in one log.

To create an Avid Log by using a word processor or text editor:

1. Enter shot log information according to the specifications described in "Avid Log Specifications" on page 99.
2. Save your file as a text file in the Save As dialog box. You can use the file name extension .txt, but it is not required.

The Avid editing application only accepts text files (ASCII format).

After you double-check the log, import it into your Avid editing application. For more information, see "Importing Shot Log Files" in the Help.

Double-Checking Log Files

When importing shot logs for video, your Avid editing application compares the video duration to the video out minus the video in. When importing film shot logs, the system compares the key number out minus the key number in.

If the system detects a discrepancy, it reports the error to the Console and does not bring the clip into the bin. The best way to ensure that clips are not discarded on import is to double-check the logs for discrepancies in duration and marks.

Open the Console by selecting Tools > Console. For more information, see "Using the Console Window" on page 85.

Transferring Bins from MediaLog

The MediaLog program is a standalone application that speeds the process of creating and importing log information from a Windows or Macintosh computer. MediaLog mirrors the Avid system interface for creating projects, bins, and clip information in the bin, and includes serial deck control for logging directly from tape.

For information on specific MediaLog procedures, see the Avid MediaLog Help.

The version of MediaLog for your platform is included with your Avid system. To order a different version of MediaLog, contact your Avid representative.

If you log your source footage by using MediaLog, you can transfer the bins directly to the Avid system for batch capturing by moving the bin files. You can also import the logs by using the same procedure as you would for other Avid-compatible log formats, as described in "Importing Shot Log Files" in the Help.

Transferring Bins (Windows)

To transfer bins from MediaLog:

1. Save the MediaLog bins to a storage device or disk.

   If you are using MediaLog for Macintosh, make sure that your Windows system can mount the storage device or disk correctly.

   If your MediaLog folders are available through a server or other networked source, then locate the MediaLog folder there instead.

2. Attach the storage device from MediaLog to the Avid system, or insert the disk into the Avid system.

3. Open the project folder in which you want to store the MediaLog bins.

   This folder is usually located in the Avid Projects folder. For information about the location of the Avid Projects folder, see “Using the Avid Projects and Avid Users Folders” in the Help.

4. Double-click the My Computer icon and double-click the storage device or disk icon.
5. Ctrl+click the bins in the storage device or disk window, and select Edit > Copy.
6. Click the project folder window, and select Edit > Paste.

Transferring Bins (Macintosh)

To transfer bins from MediaLog:

1. Save the MediaLog bins to a storage device or disk.

   If your MediaLog folders are available through a server or other networked source mounted on your desktop, then locate the MediaLog folder there instead.

2. Quit the Avid application.
3. Open the project folder in which you want to store the MediaLog bins. This folder is usually located in Macintosh HD/Users/Shared/Avid Projects
4. Attach the storage device from MediaLog to the Avid system, or insert the disk into the Avid system.
5. Double-click the icon for the storage device or disk.
6. Shift+click the bins in the Directory window and drag them into the project folder.

Associating the Bin with Your Project

To associate the transferred bins with your project:

1. Restart the Avid application and open your project.
2. Associate the imported bins with your project by doing the following:
   a. Select File > Open Bin.
   b. Locate the new bin by using the Open Bin dialog box.
   c. Double-click the bin to open it within your project.

   The new bin appears in the Bins list in the Project window.

The bins you have imported contain master clips only with no associated media files. Before you can view or manipulate these clips, you must create the associated media files by batch capturing the source material. For information about batch capturing, see “Batch Capturing from Logged Clips” in the Help.

Logging Directly into a Bin

You can log clips directly into a bin by using the Capture tool in one of two ways described in this section:

- Log directly into a bin with an Avid-controlled deck for semiautomated data entry.
- Log manually during or after viewing of footage offline with a non-Avid-controlled deck or other source.

Tips for Logging Preroll, Logging Timecode, and Naming Tapes

Observe the following important guidelines for preroll, timecode formats, and naming of tapes when logging prior to capturing.

Logging Preroll

Be sure to leave adequate preroll with continuous timecode prior to IN points when logging your tapes. The recommended minimum preroll is 2 seconds for Betacam® playback, 5 seconds for 3/4-inch U-matic® playback, and 6 seconds for DV playback.

You set the default preroll for tape playback by using the Preroll menu in the Deck Settings dialog box. For more information, see "Deck Settings" on page 652.

Logging Timecode

Within an NTSC project, check the timecode format of each tape (drop-frame versus non-drop-frame timecode) when you are logging without a tape in the deck. Log drop-frame timecode by using semicolons (;) between the hours, minutes, seconds, and frames. Log non-drop-frame timecode with colons (:). You can set the timecode format to use in the Deck Preferences Settings dialog box. For more information, see "Deck Preferences Settings" on page 654.

To change the logged timecode format, select Clip > Modify. For information, see "Modifying Clip Information Before Capturing" on page 132.

Naming Tapes

When entering tape names in the Capture tool, consider the following:

- Tape names must be alphanumeric characters (A to Z, 0 to 9). They can include uppercase and lowercase characters. The maximum length of a name is 32 characters.
- It is possible to have a single tape listed as several different tapes if you alter the case of the letters. For example, if you type a single name as *TAPE, Tape*, and *tape* on three different occasions, all three names appear. This can cause significant problems in keeping track of clips when batch capturing, recapturing, and generating an EDL. Select a case convention and maintain it throughout a project.

If you want your Avid system to consider master clips as coming from the exact same tape, you should try to select that tape name from the Select Tape dialog box. If you do not see the tape you are looking for, but know you have online media from that tape, you should click the Scan for Tapes button. For more information, see "Logging with Avid-Controlled Decks" on page 113.

- It is important that you devise a naming scheme for your tapes. For example, tapes with similar names can be easily sorted and viewed together in a bin. However, it can be difficult to distinguish among numerous tapes with similar names when trying to locate a specific tape quickly. Name tapes based upon the amount and complexity of your source material.
- If you are planning to generate an edit decision list (EDL) for import into an edit controller for online editing, double-check the controller's specifications beforehand. Some edit controllers truncate source tape names to as few as six characters, while others eliminate characters and truncate to three numbers. Alterations like these at the EDL stage might cause the system to identify different source tapes with similar names in the same way, causing you to lose track of source material.

Logging with Avid-Controlled Decks

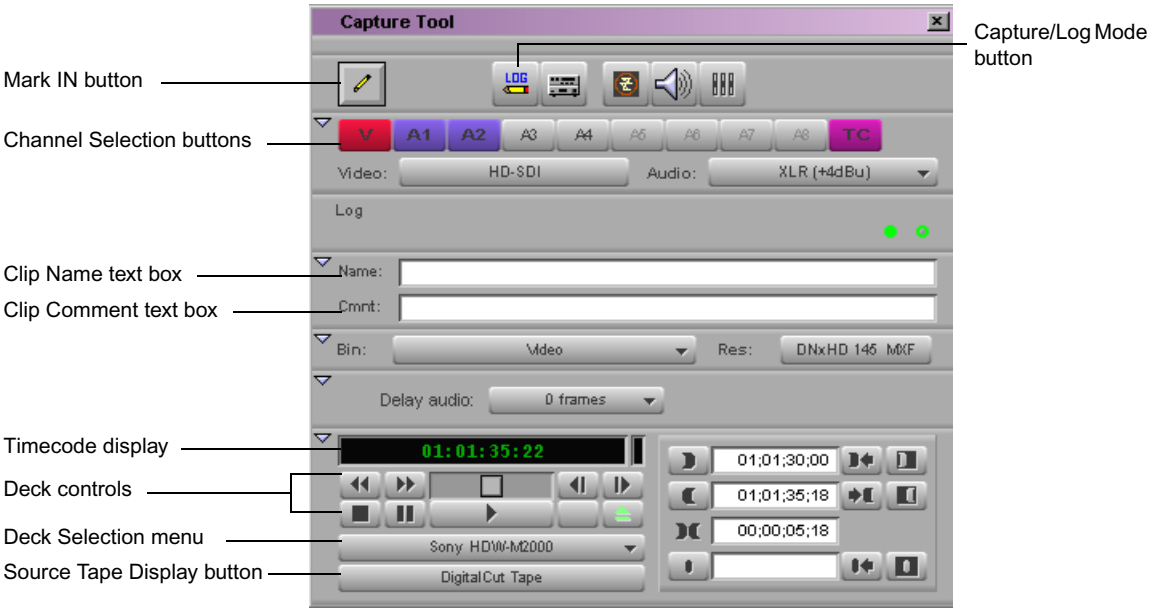
When you log with a compatible tape deck controlled from within your Avid editing application, you can automate part of the logging process by using buttons to enter frame-accurate timecode information from the deck. This method is more accurate than manual entry because timecodes are transferred directly from tape to the bin.

For information about connecting a compatible deck to your system, see "Connecting Peripheral Equipment" in the Help.

To log clips directly into a bin from an Avid-controlled deck:

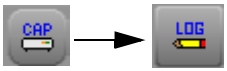
1. Make sure the deck is properly connected and turned on.
2. Open the bin where you want to store the clips.
3. Select Tools > Capture.

   The Capture tool opens. Playback from the deck is displayed in the Client monitor.



If you forget to connect and turn on the power to the deck before opening the Capture tool, you can reinitialize deck control after turning it on by clicking the Deck Selection menu, and selecting Check Decks.

4. If the Capture tool is not currently in Log mode, click the Capture/Log Mode button until the LOG icon appears.



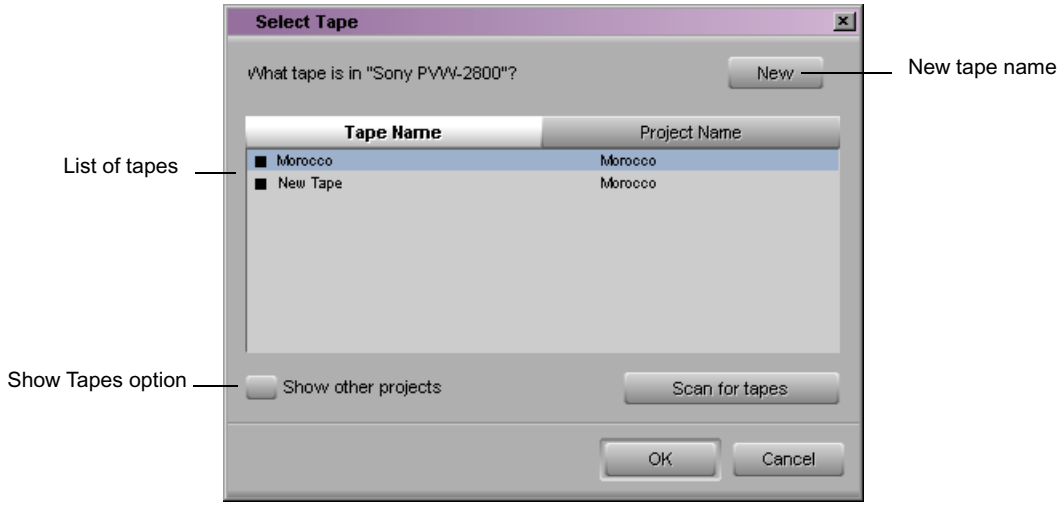
5. Click the Deck Selection menu, and select a deck.

   For more information, see “Selecting a Deck in the Capture Tool” in the Help.

6. Insert your tape into the deck.

   The Select Tape dialog box opens.

   You can select the option “Show other project’s tapes” to display the tape names and associated project names for all bins that have been opened in the current session.



Because the media file database does not open when you start your Avid editing application, tape names of all online media files do not appear automatically.

If the tape name you are searching for does not appear in the Select Tape dialog box, click the Scan for Tapes button. Tape and project names are listed.

7. Provide the system with a tape name in one of the following ways:
   - Select the name of the tape from the list in the Select Tape dialog box and click OK.
   - Click New if the tape is not in the list. A new tape name line appears in the dialog box. Type the new name and click OK.

   The tape name is displayed in the Capture tool.

For guidelines when naming tapes, see “Naming Tapes” on page 113.

   A message that the system is waiting for you to mark an IN point is displayed in the message bar.

8. Set either an IN point or an OUT point for the clip you want to log using one of the following methods:

- **If you want to keep the deck running while you log:** Start the deck. At the point where you want to start the clip, click a Mark IN button (you can use either the Mark IN button in the upper left of the Capture tool or the Mark IN button in the lower right) or press the F4 key. The deck continues to play.

If you want to pause the deck while you enter a clip name and comments, see "Pausing the Deck While Logging" on page 117.

- **If you want to cue your source tape to the start or end point:** Use the deck controls in the Capture tool to cue your source tape to the start or end point. Click a Mark IN button or the Mark OUT button in the lower right of the Capture tool.

- **If you want to log using timecode:** If the footage starts at a known IN point or ends at a known OUT point, type the timecode in the text box next to the Mark IN button or the Mark OUT button. Then enter the mark by pressing the Go to IN button or the Go to OUT button, which scans the tape forward to the mark, or by pressing Enter (Windows) or Return (Macintosh).

After you set the mark, the Mark IN button changes to the Mark OUT and Log button or the Mark IN and Log button, depending on the first mark you set.

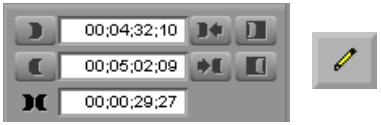
Mark IN and Log

Mark OUT and Log

For NTSC film-to-tape transfer or footage downconverted from 1080p/24, you must log the correct pulldown phase. See "Setting the Pulldown Phase" on page 121 and "Entering Pulldown Information" on page 126.

9. (Option) Enter a clip name and comment in the corresponding text boxes in the Capture tool.
10. To finish logging the clip, do one of the following:
    - **If the deck is running:** Click the Mark OUT and Log button or press the F4 key. The clip is logged into the bin and the deck continues to play.
    - **If you want to cue the remaining start or end point:** Use the deck controls to locate the start or end point. Set the remaining IN point or OUT point either by clicking the Mark OUT and Log button or the Mark IN and Log button. The clip is logged into the bin.

- **If you want to log using timecode:** Type a timecode for the clip's IN point, OUT point, or duration in the timecode text boxes next to the corresponding icon.Then enter the mark by pressing the Go to IN button or the Go to OUT button, which scans the tape forward to the mark, or by pressing Enter (Windows) or Return (Macintosh). To log the clip into the bin, click the Log Clip button in the upper left of the Capture tool.



The clip name, which is automatically named and numbered by the system, is highlighted in the bin and ready to be renamed.

11. (Option) Rename the clip by typing a new name in the highlighted area.

Consider changing the clip name immediately, because it is easy to forget the contents of each clip if you are logging many clips. You can, if necessary, accept the clip name and proceed with the logging process and change the clip names in the bin at a later time.

12. Repeat these steps until you have logged all your clips.

While viewing the footage, you can continuously update your marks on-the-fly by clicking the Mark IN button or the Mark OUT button repeatedly before entering the second mark.

Pausing the Deck While Logging

If the deck is playing while you log clips, you can direct your Avid editing application to automatically pause the deck after you set an IN point and an OUT point. While the deck is paused, you can enter the name and comment for the clip you want to log.

To pause the deck while logging:

1. In the General tab of the Capture Settings dialog box, select the "Pause deck while logging" option.
2. Set up your deck and the Capture tool as described in "Logging with Avid-Controlled Decks" on page 113.

3. When you reach the point where you want to start the clip, click the Mark IN button in the upper left of the Capture tool or press the F4 key. The Mark IN button changes to the Mark OUT button and the deck continues to play.

4. When you reach the point where you want to end the clip, click the Mark OUT button in the upper left of the Capture tool or press the F4 key again. The Mark OUT button changes to the Log Clip button, and the deck pauses.

5. Type a clip name and comment in the corresponding text boxes in the Capture tool.
6. Click the Log Clip button or press the F4 key.

   Your Avid editing application logs the clip in a bin, and the deck starts playing again.

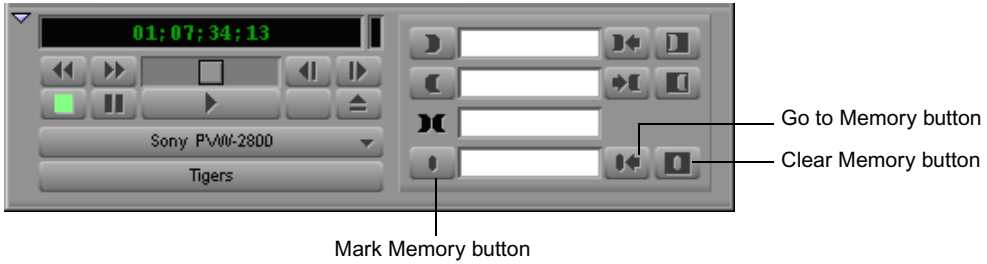
Using a Memory Mark

You can add a memory mark to a particular location on a tape. You can then use the Go to Memory button to move through the tape to the marked location.

To use a memory mark for a particular location on a tape:

- Click the Mark Memory button in the Capture tool to mark the location.
- Click the Go to Memory button to move through the tape to the marked location.
- Click the Clear Memory button to clear the memory mark.

You can add one mark per tape. The memory mark is not stored on the tape. When you remove the tape from the deck and insert another tape into the deck, the mark is cleared.



Logging with Non-Avid-Controlled Decks

You can use the Capture tool to log clips directly into a bin from a source that is not controlled by your Avid editing application. For example, you can log clips from a deck that is not connected to the system, or from handwritten or printed log information for a tape that was previously logged but is not currently available.

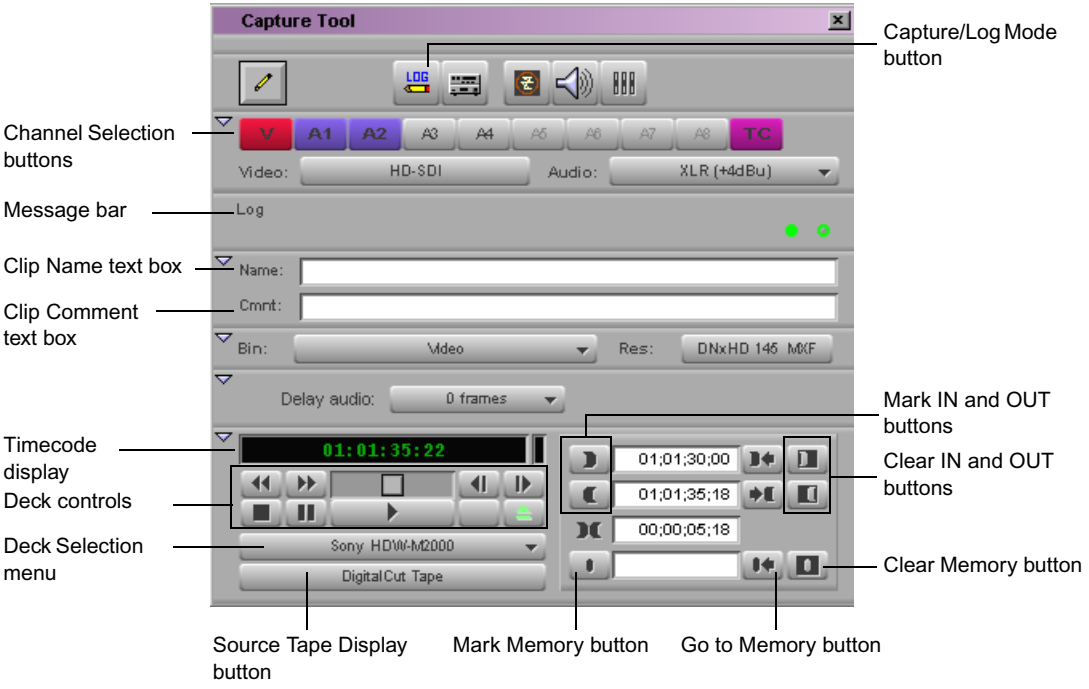
For NTSC projects, when you are logging within the Capture tool, you should leave the deck empty. If a tape remains in the deck, the system determines drop-frame or non-drop-frame from that tape whether or not it matches your tape's timecode format.

To log clips directly into a bin from a non-Avid-controlled deck:

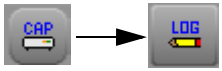
1. If there is a deck connected to the system, eject the tape from the deck.
2. Double-click Deck Preferences in the Settings list of the Project window.

   The Deck Preferences dialog box opens.
3. For NTSC projects, click the "When no tape in deck log as" menu, and select Non-Drop-Frame or Drop-Frame.
4. Click OK to close the dialog box.
5. Open the bin where you want to store the clips.
6. Select Tools > Capture.

   The Capture tool opens.



7. Click the Capture/Log Mode button in the Capture tool until the LOG icon appears.



8. Click the Source Tape Display button.

   A dialog box opens.

9. Click Yes to open the Select Tape dialog box.
10. Double-click the name of the tape in the dialog box, or click New and enter the name of the tape.
11. Click OK.
12. Select the tracks you want to log, using the Channel Selection buttons in the Capture tool.
13. Type the start timecode in the Mark IN text box.
14. (Option) Enter a clip name and comment in the corresponding text boxes.
15. Type the end timecode in the Mark OUT text box.

For NTSC film-to-tape transfer or footage downconverted from 1080p/24, you must log the correct pulldown phase. See "Setting the Pulldown Phase" on page 121 and "Entering Pulldown Information" on page 126.

16. Click the Log Clip button.

    The clip is logged into the bin. The clip name, which is automatically named and numbered by the system, is highlighted in the bin and ready to be renamed.
17. (Option) Rename the clip by typing a new name in the highlighted area.

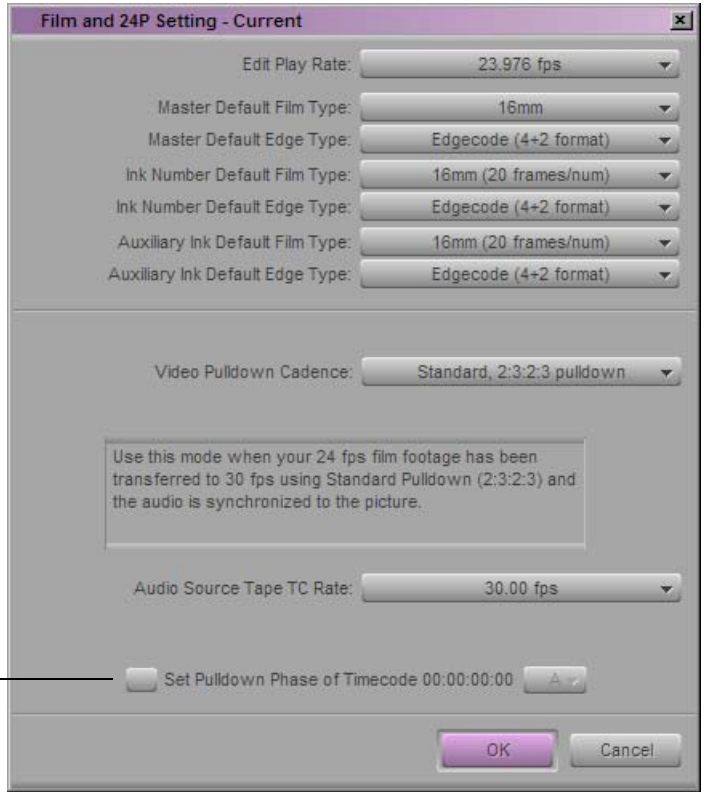
Consider changing the clip name immediately, because it is easy to forget the contents of each clip if you are logging many clips. You can, if necessary, accept the clip name and proceed with the logging process and change the clip names in the bin at a later time.

18. Repeat these steps until you have logged all your clips.

Setting the Pulldown Phase

If you are logging or capturing 24-fps sources (film-to-tape transfers, media downconverted from 1080p/24 footage, or both), you can set the pulldown-to-timecode relationship for a transferred tape in the Film and 24p Settings dialog box.

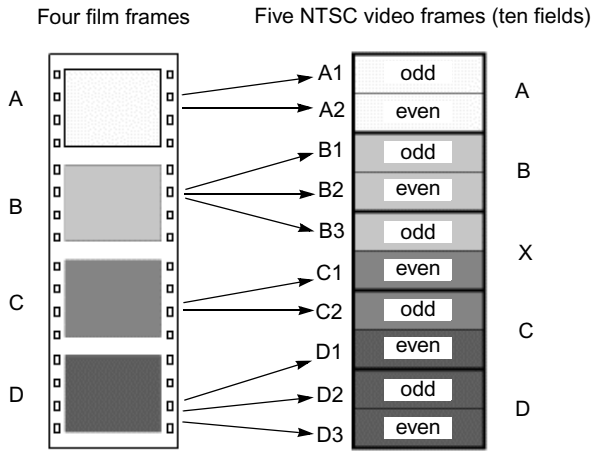
For information about the pulldown process, see "Transferring 24-fps Film to NTSC Video" on page 808.


Film and 24P Setting - Current
Edit Play Rate:
23.976 fps
Master Default Film Type:
16mm
Master Default Edge Type:
Edgecode (4+2 format)
Ink Number Default Film Type:
16mm (20 frames/num)
Ink Number Default Edge Type:
Edgecode (4+2 format)
Auxiliary Ink Default Film Type:
16mm (20 frames/num)
Auxiliary Ink Default Edge Type:
Edgecode (4+2 format)
Video Pulldown Cadence:
Standard, 2:3:2:3 pulldown
Use this mode when your 24 fps film footage has been transferred to 30 fps using Standard Pulldown (2:3:2:3) and the audio is synchronized to the picture.
Audio Source Tape TC Rate:
30.00 fps
Set Pulldown Phase of Timecode 00:00:00:00
A
OK
Cancel

Set Pulldown Phase option

You set this relationship by selecting the *pulldown phase* (sometimes called the *pulldown frame* or *pullin frame*), which is the video frame at which the master clip starts. The pulldown phase is designated A, B, X, C, or D. Film labs and transfer houses typically use the A frame to start the transfer.

The following illustration shows the relationship between film frames and video frames.



This setting is not available in matchback projects. However, you can modify the pulldown phase after you log it. See "Entering Pulldown Information" on page 126.

The Set Pulldown Phase setting lets you log, batch capture, and capture-on-the-fly more easily, because the correct pulldown phase of any IN point for a particular tape is automatically determined. Setting the correct pulldown phase prevents inaccuracies in cut lists and matchback EDLs. It also prevents incorrectly captured clips that appear to stutter when played in 24p NTSC projects.

For example, if you set the pulldown phase of 00:00:00:00 as A (indicating that the A frame is located at timecodes ending in 0 or 5), any timecode you log calculates its pulldown phase based on the same sync point, regardless of where you set the IN point. If you use the Capture tool to log a clip that starts at 01:00:10:01, your Avid editing application automatically enters B in the Pullin column of the bin. If you capture on-the-fly starting at 01:00:10:01 (a B frame), the system begins to capture at the next A frame, in this case, 01:00:10:05.

The Set Pulldown Phase feature does not work if you capture from a mark IN.

The pulldown-to-timecode relationship might vary from tape to tape, or within the same tape, depending on how the footage was transferred. If you find that a tape requires a different pulldown phase, you can change the setting in the Film and 24p Setting dialog box, or use the Modify Pulldown Phase dialog box before capturing. See "Modifying the Pulldown Phase Before Capturing" on page 128.

For information about fixing an incorrectly logged sync point, see "Modifying the Pulldown Phase After Capturing" on page 179.

To set the pulldown phase:

1. Determine the correct pulldown phase for 00:00:00:00 in one of the following ways:
   - If you are capturing film-to-tape transfers, check the transfer log.
   - If you are capturing tapes that have been downconverted from 1080p/24, check what pulldown frame was set for 00:00:00:00 on the deck that performed the conversion.
   - If you still cannot determine the pulldown phase, see "Determining the Pulldown Phase" on page 127.
2. Double-click Film and 24p in the Settings list of the Project window.
3. Select the option Set Pulldown Phase of Timecode 00:00:00:00 and then click the menu, and select the correct pulldown phase (A, B, X, C, D).
4. Click OK.

Logging Film Information

Once you have entered or imported the basic log information into a bin, you might want to add film-related log information before capturing. This section describes procedures and formats for adding various film headings.

The following are some important requirements for film-based projects:

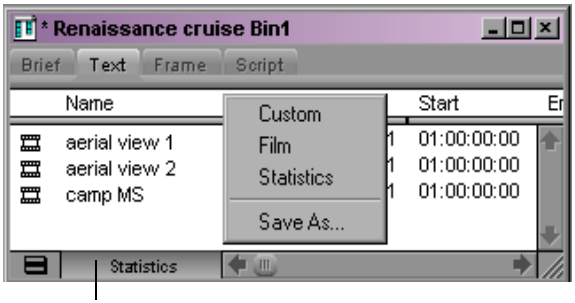
- The minimum information required for capturing is the data recorded in the Start and End video timecode columns, and the pulldown phase for NTSC transfers, which is noted in the Pullin column (24-fps capture only).
- Each reel of film can be logged as a separate clip, and corresponds to a single master clip, only if the video transfer of the film reel has continuous pulldown (NTSC format), and continuous timecode (NTSC and PAL). If the film reels for your project do not meet this condition, then you must log each *take* on a reel of film as a separate clip, which corresponds to a single master clip.

  If you log each reel as a separate clip, you can use the F1 and F2 keys to create subclips for each take. See "Creating Subclips While Capturing" on page 158.
- If you want to produce a cut list, or use film-tape-film-tape for recapturing, you must log key numbers. You can add key numbers after capturing, before you create the cut list.
- All film and video reference numbers must be in ascending order.

Displaying Film Columns

To display film columns in the bin:

1. Click the Bin View menu at the bottom of the Bin window, and select Film to display all the required film column headings.



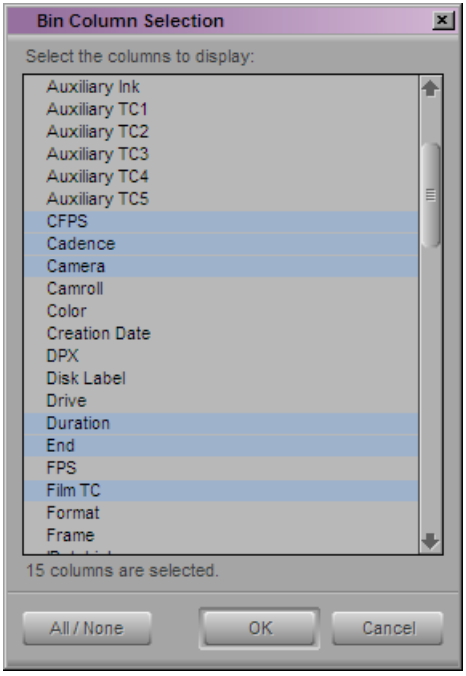
2. To log data under optional headings (such as Ink Number, Auxiliary TC1-Auxiliary TC5, or Film TC), do the following:

   a. Select Bin > Headings.

      The Bin Column Selection dialog box opens.

   b. Ctrl+click (Windows) or click (Macintosh) the specific headings you want to add.

   c. Click OK.

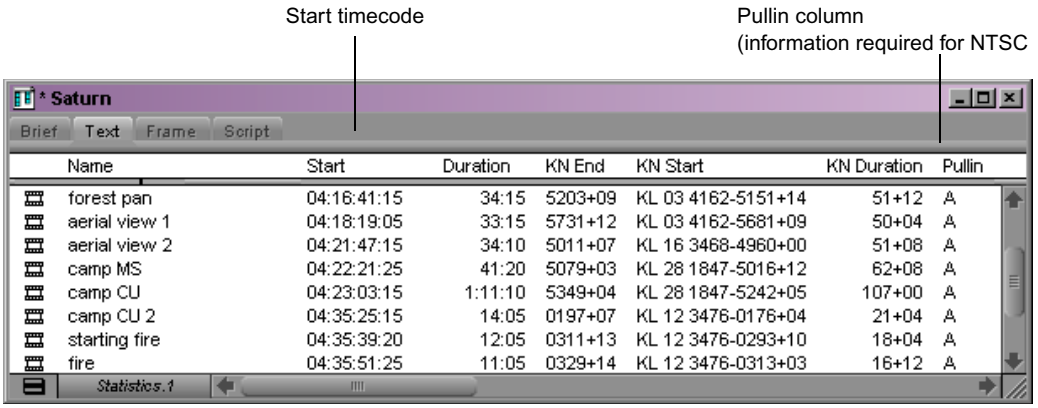


3. You can also track custom information for the job by creating a custom heading. To create a new heading, type a name that describes the information in the headings bar at the top of the bin. For more information on customizing bin views, see “Customizing Bin Views in Text View” on page 213.

Entering Pulldown Information

To accurately capture NTSC transfer tapes in 24p projects, you need to enter pulldown information into the bin. (This information is not required for PAL transfer tapes.) Setting the correct pulldown phase prevents inaccuracies in cut lists and matchback EDLs. If you are importing a log generated during the telecine transfer, the pulldown information is automatically included in the bin.

For information about importing a log file, see "Setting the Pulldown Phase" on page 121.



If you do not have a transfer log, or if the transfer log is incorrect, you need to add the information manually. If you log clips by using the Capture tool, the Avid system uses the A frame as the default pulldown phase. You might need to edit this value.

For 24p projects, you can set a default pulldown phase in the Film and 24p Settings dialog box. See "Setting the Pulldown Phase" on page 121 (24p projects only).

For matchback projects, you need to log key-number information before you can log pulldown information.

By specifying the pulldown phase in the Pullin column, you accomplish the following:

- You ensure that the clips start with the correct frame for the pulldown. Otherwise, you might experience inaccuracies in key-number tracking and in the cut lists.
- You indicate where the pulldown fields are located so the Avid system can accurately eliminate the pulldown fields during the capturing process, leaving you with a frame-to-frame correspondence between your digital media and the original 24-fps footage (24p projects only).

To do this, you must indicate whether the sync point at the start of each film clip transferred to tape is an A, B, C, or D frame, as described in "Determining the Pulldown Phase" on page 127 and "Modifying the Pulldown Phase Before Capturing" on page 128.

In most cases, the sync point is the A frame.

Determining the Pulldown Phase

It is easiest to determine the pulldown of a sync point (or pulldown phase) if you ask your film lab to keypunch (cut a small hole in) the sync frame at the zero frame in the original film footage before transferring the film to video. Many film labs or transfer houses can also provide a pulldown frame indicator displayed at the far right of the burn-in key numbers, depending on the equipment available. Ideally, the A-frame pulldown coincides with timecode ending in 0 and 5 (:00, :05, :10, and so on).

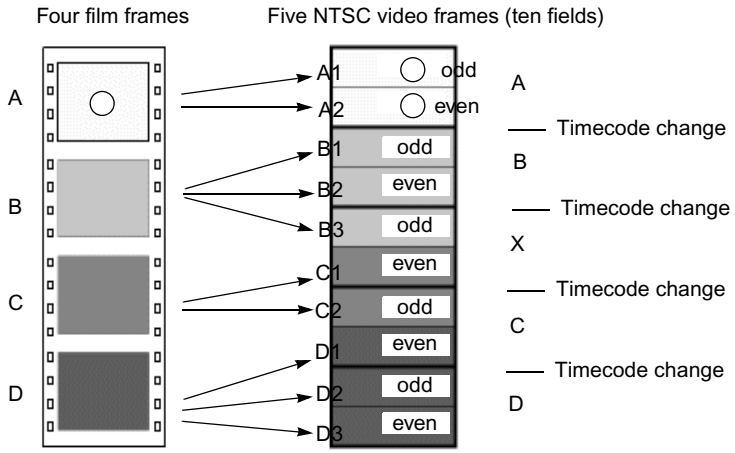
If the footage has not been keypunched, you can determine pulldown according to clapsticks or any other distinctive frame at the beginning of the clip. Determining the pulldown is easier if the frames depict motion.

For instructions on determining the pulldown phase for material already captured, see "Modifying the Pulldown Phase After Capturing" on page 179.

To determine the pulldown phase:

1. While viewing the video transfer on a monitor, go to the keypunched (or clapsticks) sync point for the beginning frame of the clip you're logging.
2. Step (jog) past the sync point frame field-by-field, using the step wheel on the tape deck. You will see either two or three keypunched fields. If the footage is not keypunched, look for two or three fields with little or no motion.
3. If there are two fields, the pulldown is either A or C. Step through the fields again, and note where the timecode changes:
   - If the timecode does not change from the first to the second field, the fields came from an A frame.
   - If the timecode changes from the first to the second field, the fields came from a C frame.

The following illustration shows a keypunch on the A frame. Notice where the timecode changes.



4. If there are three keypunched fields, or fields without motion, the pulldown is either B or D. Step through the fields again and note where the timecode changes:
   - If the timecode changes from the second to the third field, the fields came from a B frame.
   - If the timecode changes from the first to the second field, the fields came from a D frame.
5. Enter or edit the information in the Pullin column in the appropriate bin, as described in "Modifying the Pulldown Phase Before Capturing" on page 128.

Modifying the Pulldown Phase Before Capturing

After you determine the correct pulldown phase (as described in "Determining the Pulldown Phase" on page 127) you can modify the pulldown phase before capturing in one of the following ways.

To modify the pulldown phase directly in the Pullin column:

1. Click the Text tab to display all bin information.
2. Click the cell you want to modify.
3. Click the cell again.

   The pointer changes to an I-beam.
4. Type the pulldown phase and press Enter (Windows) or Return (Macintosh).

To modify the pulldown phase for multiple clips:

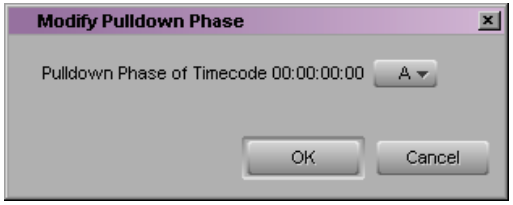
1. Ctrl+click (Windows) or Shift+click (Macintosh) the clips you want to modify.
2. Select Clip > Modify.
3. Click the Modify Options menu, and select Set Pull-in.
4. Select A, B, C, or D.
5. Click OK.

   The pullin for all selected clips is changed, based on the pulldown phase you selected.

To modify the pulldown phase for multiple clips that have the same pulldown-to-timecode relationship:

1. Ctrl+click (Windows) or Shift+click (Macintosh) the clips you want to modify.
2. Select Clip > Modify Pulldown Phase.

   The Modify Pulldown Phase dialog box opens.



3. Click the menu, and select the correct pulldown phase for timecodes ending in 0 or 5.
4. Click OK.

   The pulldown phase for each selected clip is changed, based on the pulldown phase you selected for 00:00:00:00.

   The Pulldown Phase setting also appears in the Film and 24p Settings dialog box (24p projects only). You can override that setting with the Modify Pulldown Phase dialog box. The selection in the Film and 24p Settings dialog box remains the same. For more information, see "Setting the Pulldown Phase" on page 121.

If you want to modify the pulldown phase after capturing, you must first unlink the clips. See "Modifying the Pulldown Phase After Capturing" on page 179.

After you capture an NTSC transfer, the timecode shows a loss of every fifth frame of video. For example, don't be alarmed if you find that your timecode jumps at one point from 1:00:14:15 to 1:00:14:17. You haven't lost a frame, just an extra pulldown field.

Entering Frames-per-Second Rates for PAL Transfers

When you log in advance for PAL film-to-tape transfers, you must log the footage as clips that have a 25-fps play rate, as listed in the FPS column of the bin. If you want, you can capture the footage on-the-fly, without logging the clips first. The minimum information required to capture the footage is the data logged in the Start and End video timecode columns.

Entering Key Numbers

To add key numbers:

- Highlight the KN Start column, then type the key number for the sync point at the start of the clip by using one of the following formats:
  - **Keykode™ Format:** Type a two-character manufacturer and film-type code, a six-digit prefix for identifying the film roll, a four-digit footage count, a two-digit frame offset, and then press Enter (Windows) or Return (Macintosh).

    Your Avid editing application adds a space, hyphen, and either a plus sign (for 35mm projects) or an ampersand (for 16mm projects) to format the number. For example, in a 35mm project, to enter KJ 23 6892-1234+15, type KJ236892123415. In a 16mm project, typing the same number results in the code KJ 23 6892-1234&15.
  - **Other Formats:** Enter other key-number formats in the Ink Number column. Type up to eight characters for the prefix, up to five characters for the footage count, two digits as the frame count, and then press Enter (Windows) or Return (Macintosh).

  The Avid system automatically calculates the ending key number (KN End), based on the timecode duration.

Make sure the correct number appears when you press Enter (Windows) or Return (Macintosh). For key-number formats other than Keykode, you might need to type the space, hyphen (-), and plus sign (+) or ampersand (&) to format the number correctly.

Entering Additional Timecodes (Option)

Consider the following when you enter additional timecodes:

- In one of the Aux TC columns (that is, Aux TC1 through Aux TC5), type an auxiliary timecode that syncs with the video timecode logged in the Start column. You can enter up to five auxiliary timecodes. Supported timecodes depend on your project: 30-fps for NTSC (drop-frame or non-drop-frame) and 25-fps for PAL. Use one of the following formats:
  - Enter a two-digit format for hours, minutes, seconds, and frames. You need not enter a leading zero. (For example, to enter 01:23:02:00, type 1230200.)
  - When working with drop-frame timecode in the NTSC format (not applicable to PAL), enter a semicolon to indicate drop-frame timecode (for example, to enter 01;23;02;00, type 01;230200).
- In the Sound TC column, enter the Nagra or DAT timecode for the original audio for the start of the clip. The timecode should sync with the video timecode logged in the Start column in the bin. Enter the source sound-roll identifier in the Soundroll column. Supported timecodes depend on your project: 30-fps for NTSC (drop-frame or non-drop-frame) and 25-fps for PAL. The clip to be captured must contain an audio track.
- In the Film TC column, enter timecode generated by a film camera (using Aaton or Arri timecode) for tracking the picture at the start of the clip. The film timecode should sync with the video timecode logged in the Start column. Only 24-fps timecode is supported. The clip to be captured must contain a video track.
- In the TC24 column, enter timecode for original HDTV sources (1080p/24) or audio DATs created for PAL feature film productions that use in-camera timecode.

You can use the Duplicate command to convert timecodes from one format to another. For more information, see "Duplicating Bin Columns" on page 224.

Entering the Ink Number (Option)

To enter ink numbers:

1. Double-click Film and 24p in the Settings list of the Project window.

   The Film and 24p Settings dialog box opens.

2. Make sure the correct options are selected for ink number format and ink number display, and click OK.

You can log different ink number formats in the same project as long as you change the ink number setting to the appropriate format before you log each type. Changing the ink number setting affects only the next ink numbers you log, not numbers that are already logged.

3. Return to the bin and enter numbers under the Ink Number heading.

   For example, use Keykode format or use a two-digit prefix to identify the roll, a hyphen, a four- or five-digit footage count, a plus sign, and a two-digit frame count (for example, AA-00924+00).

Entering Additional Film Data

You can continue to log additional film data into the Labroll, Camroll, Soundroll, Scene, and Take columns, or into your own custom columns, as necessary. You can include the information in these columns on the cut lists you create for your edited sequence.

Modifying Clip Information Before Capturing

You can change or modify the information logged in the bin. This is especially useful if you find that some of the data is incorrect, or if you need to update the information based on technical needs, such as varying timecode formats or film specifications.

There are two ways to modify clip information before capturing:

- You can modify the information directly by clicking in a column and by entering the new information one field at a time.
- You can use the Modify command to change selected groups of clips all at once.

For more information, see "Modifying Clip Information" on page 227.

For information on modifying the pulldown phase, see "Entering Pulldown Information" on page 126.

Modifying tape names and timecodes affect any key numbers entered for the selected clips.

Exporting Shot Log Files

You can export a shot log file from your Avid editing application in one of two formats for making adjustments in a text editor or for importing into another system.

To export a shot log based on clip information in a bin:

1. Open the bin containing the clips you want to export. If necessary, click the Text tab to display all clip information.
2. Click a Clip icon to select it.

3. Ctrl+click (Windows) or Shift+click (Macintosh) each additional clip you want to export.
4. Select File > Export.

   The Export As dialog box (Windows) or Destination dialog box (Macintosh) opens with a default file name in the File name text box (Windows) or Export As text box (Macintosh), based on the file type.
5. Select the Export setting by doing one of the following:
   - If you have previously created an Export setting for exporting shot log files, click the Export menu, and select the setting. Then, go to step 10.

     For information on creating Export settings, see "Customizing Export Setting" in the Help.
   - If you want to review or edit Export settings, go to step 6.
6. Click Options.

   The Export Settings dialog box opens.
7. Click the Export As menu, and select one of the following:
   - Select Avid Log Exchange to export the selected bin as a shot log file that complies with ALE specifications. For information about Avid Log Exchange, see "Preparing Log Files for Import" on page 90.
   - Select Tab Delimited to export the selected bin as a tab-delimited ASCII text file.

ALE and tab-delimited files include information for master clips and subclips only. Information for other objects, such as group clips, sequences, and precomputes, is not included.

8. To modify an existing setting, select Save.
9. To save the setting with a new name, select Save As and type a name in the dialog box that opens.

   The Export Setting name is added to the list of formats available from the Export dialog box.
10. Click Save to close the Export As dialog box (Windows) or the Destination dialog box (Macintosh).
11. (Option) Change the file name. In most cases, keep the default file name extension.
12. Select the destination folder for the file and click Save.

    The file is exported and appears at the selected destination.

To export an entire bin:

1. Ctrl+click selected clips to deselect them, so that nothing is selected in the bin.
2. Select File > Export.

   The Export Bin As dialog box opens.
3. Click the Export Bin As menu, select the appropriate option, and click OK.

   A shot log of only the master clips in the bin is created.

Chapter 4
Capturing Media: Advanced

Capturing is the process of creating digital media from videotape or audio input. When you capture, you convert source material from videotape into master clips that contain reference information. You also create associated media files that contain the digital audio and video. The following topics provide advanced information about capturing:

- Advanced Capture Settings
- Understanding Drop-Frame and Non-Drop-Frame Timecode
- Preparing for Audio Input: Advanced
- Preparing for Video Input: Advanced
- Using Function Keys When Capturing
- Special Capture Procedures
- Understanding DV Capture Offset
- Capturing DV Material with Offset
- Delaying Audio
- Live Capture with External Timecode
- Capturing to the Timeline
- Capturing Video Without Pulldown into a 24p NTSC Project
- Remote Play, Capture, and Punch-In
- Relinking Clips by Key Number
- Modifying the Pulldown Phase After Capturing
- DV and HDV Scene Extraction
- Support for Panasonic VariCam

For basic information about capturing, see “Capturing Media: Basics” in the Help or the Basics Guide for your Avid editing application.

Advanced Capture Settings

Capture settings include options for capturing, batch capturing, auto capturing, capturing to multiple media files, DV or HDV scene extraction, and setting key commands. For basic capture settings, see “Selecting Settings for Capture” in the Help. This section includes information about advanced capture settings.

For reference information about all settings in the Capture Settings dialog box, see “Capture Settings” on page 636.

Capturing Across Timecode Breaks

If the tape you are capturing contains breaks in the timecode, there are two settings in the General tab of the Capture Settings dialog box you can use to capture across the timecode breaks:

- **Preroll method**

  By default, your Avid editing application uses the Best Available preroll method, see “Selecting the Preroll Method” on page 137. If you know the timecode contains breaks, you can select Best Available Control Track.

- **Capture across timecode breaks**

  When you select this option, your Avid editing application begins capturing a new master clip at each timecode break. Select this option when you are performing an unattended batch capture or autocapture. Deselect this option if you plan to capture the entire tape as a single clip by capturing to multiple media files. See “Capturing to Multiple Media Files” on page 138.

To select settings for capturing across timecode breaks:

1. Double-click Capture in the Settings list of the Project window.

   The Capture Settings dialog box opens.

2. Click the General tab.
3. Select the preroll method. See “Selecting the Preroll Method” on page 137.
4. Select the “Capture across timecode breaks” option.
5. Click OK to close the dialog box and apply the options.

Selecting the Preroll Method

The Preroll Method menu in the General tab of the Capture Settings dialog box allows you to capture more efficiently when a source tape contains timecode breaks.

To set the preroll method:

1. Double-click Capture in the Settings list of the Project window.

   The Capture Settings dialog box opens.

2. Click the General tab.
3. Click the Preroll Method menu, and select a method from the options described in the following table.
4. Click OK to close the dialog box and apply the options.

Preroll Method	Description
Best Available	Your Avid editing application first checks the tape for timecode to use for preroll. • If there is no timecode, or not enough timecode, the system uses the control track for preroll. • If there is not enough control track for preroll, the system adjusts the specified preroll time to accommodate the amount of valid control track available. After the system adjusts the preroll to the individual shot, it returns to using the user-specified preroll time until it needs to adjust the time again. • If the adjusted preroll time is too short to sync lock at the IN point, the system does not capture the shot and displays an error message. Use this method to capture material as automatically as possible. As the system makes multiple attempts to preroll, this method is slower at times but almost always performs the preroll without interruption.
Standard Timecode	Your Avid editing application uses timecode to determine the preroll point. If there is a not enough consecutive timecode (for example, if there is a break in the timecode), the system does not capture the shot and displays an error message. Use this method if you know the timecode is consecutive or if you want to determine if there are timecode breaks.

Preroll Method	Description
Best Available Control Track	Your Avid editing application uses the control track to determine the preroll point. • If there is not enough control track for preroll, the system adjusts the specified preroll time to accommodate the amount of valid control track available. After the system adjusts the preroll to the individual shot, it returns to using the user-specified preroll time until it needs to adjust the time again. • If the adjusted preroll time is too short to sync lock at the IN point, the system does not capture the shot and displays an error message. Use this method if you know there are timecode breaks and want to capture material as automatically as possible. Because the system does not use timecode, it might
Standard Control Track	Your Avid editing application uses the control track to determine the preroll point. If there is a break in the control track, the system stops capturing and displays an error message. Use this method if you know the control track is continuous or if you want to determine if there are breaks in the control track.

Capturing to Multiple Media Files

You can capture video and audio to multiple media files across multiple drives. MXF is automatically captured to multiple files; OMF is captured to multiple files when you set an option in the Capture Settings dialog box.

Capturing to multiple media files has the following advantages:

- You can create longer clips whose media files would otherwise exceed the file size limitation of 2 GB.
- You can group all drives with the multiple file options, enabling the system to capture long clips continuously; for example, satellite feeds.
- The system makes more efficient use of drive space, particularly when capturing long clips.

To capture video or audio to multiple OMF media files:

1. Verify that OMF is selected in the Media Type tab of the Media Creation dialog box.
2. Double-click Capture in the Settings list of the Project window.
3. Click the OMF Media Files tab.
4. In the OMF Media Files tab, select the option “Capture to multiple files.”

For information about other options, see “Capture Settings: OMF Media Files Tab” on page 640.

5. Click OK to close the dialog box and apply the options.
6. Select Tools > Capture.

   The Capture tool opens.
7. To capture to multiple files across drives, click the Target Drive menu in the Capture tool, and select Change Group.

   The Drive Group dialog box opens.
8. Ctrl+click (Windows) or Shift+click (Macintosh) multiple drives to include in the capturing session, or click the All button to select all drives.

If you click Clear, all selections are removed. You must select at least one drive before you can click OK to exit the dialog box.

9. Click OK to close the dialog box and apply the changes.
10. Proceed with capturing.

For media file management purposes, any clip whose media exceeds the 2-GB limit has more than one media file associated with it.

For more information on managing media files, see "Managing Media Files: Basics" in the Help.

General Settings for Capture

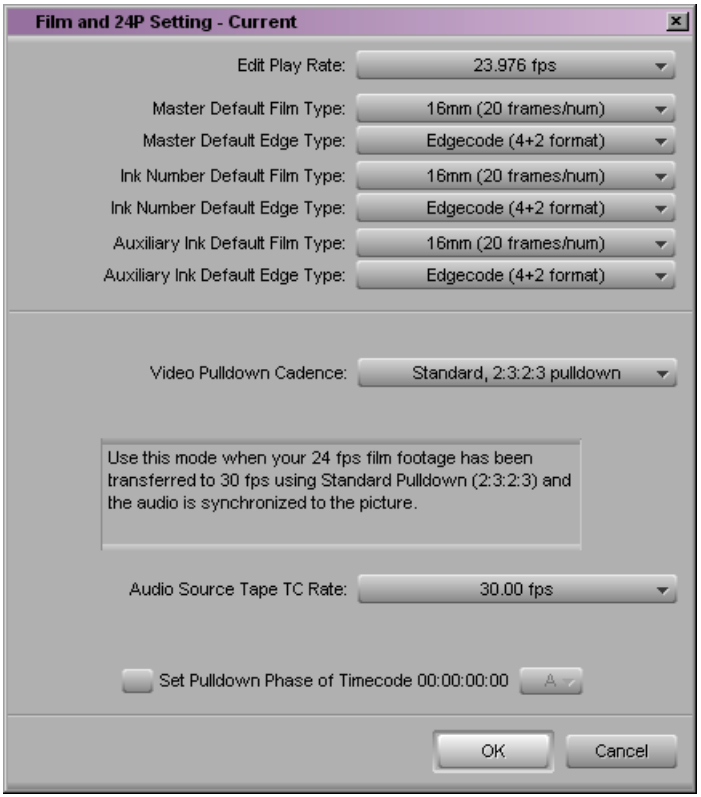
The General Settings dialog box (accessed through the Settings list of the Project window) includes the following options that are relevant to capture.

- **Project Type:** The top portion of the dialog box displays the project type (NTSC or PAL) and other useful information such as the type of film used as source media.
- **NTSC Has Setup:** This option applies to standard NTSC format and is selected by default. If the source footage is in the NTSC-EIAJ format standard (used primarily in Japan), deselect NTSC Has Setup.

For information about other settings in the General Settings dialog box, see "General Settings" on page 690.

Settings for Film and 24p Projects

The following settings are important when you are capturing video transferred from film or capturing 24p video. You should specify these settings for film or 24p projects immediately after you create a new project and before capturing. For information about other film settings, see "Film and 24P Settings" on page 687.


Film and 24P Setting - Current
Edit Play Rate:
23.976 fps
Master Default Film Type:
16mm (20 frames/num)
Master Default Edge Type:
Edgecode (4+2 format)
Ink Number Default Film Type:
16mm (20 frames/num)
Ink Number Default Edge Type:
Edgecode (4+2 format)
Auxiliary Ink Default Film Type:
16mm (20 frames/num)
Auxiliary Ink Default Edge Type:
Edgecode (4+2 format)
Video Pulldown Cadence:
Standard, 2:3:2:3 pulldown
Use this mode when your 24 fps film footage has been transferred to 30 fps using Standard Pulldown (2:3:2:3) and the audio is synchronized to the picture.
Audio Source Tape TC Rate:
30.00 fps
Set Pulldown Phase of Timecode 00:00:00:00
A
OK
Cancel

- **Video Pulldown Cadence:** allows you to specify how the application handles pulldown frames:
  - *Video rate, no pulldown*: Select this option when capturing 24-fps footage that was transferred MOS (roughly translated as "without sound") to 30 fps by speeding up the film, and the audio was brought into the Avid system separately at 100 percent of the actual speed.
  - *Standard 2:3:2:3 pulldown*: Select this option when capturing 24-fps footage that was transferred to 30 fps by duplicating frames (pulldown) and the audio is synchronized to the picture.

Advanced 2:3:3:2 pulldown: Select this option when capturing 24-fps footage that was recorded to 60 fields (NTSC) using Advanced Pulldown and the audio is synchronized to the picture.If you are capturing sound that has been created during an NTSC film-to-tape transfer, you need to set the pulldown switch before you begin capturing. See "Setting the Pulldown Switch" in the Help.

For NTSC projects, you can mix footage transferred with pulldown and footage transferred without pulldown (video rate). You can also mix sound transferred at 0.99 (with pulldown) and 1.00 (without pulldown).

For information about film-to-tape transfer methods, see "Film-to-Tape Transfer Guidelines" on page 817.

- **(PAL only)** You define the **Audio Transfer Rate** in the New Project dialog box when you create a 24p PAL film project. (It is not needed for a 25p PAL project because there is no film speedup during the transfer.) It is important to keep the audio transfer rate constant for the project. However, if there is a specific element that you need to capture at a different rate, you can use the Film and 24p Settings dialog box to change the rate. The following options are available:
  - *Film Rate (100%):* Select this option when your 24-fps film footage has been transferred MOS to 25 fps by speeding up the film, and the audio comes in separately at 100 percent of the actual speed (PAL Method 2).
  - *Video Rate (100%+):* Select this option when your 24-fps film footage has been transferred to 25 fps by speeding up the film, and the audio is synchronized to the video picture. This means that the audio speed is increased by 4.1 percent (PAL Method 1).

  For PAL 24p projects, you can mix audio that has been transferred at 4.1 percent speedup (video rate, PAL Method 1) with audio that has not been transferred (film rate, PAL Method 2). However, Avid does not recommend this. See "Audio Transfer Options for 24p PAL Projects" on page 794.

The Info tab in the Project window allows you to view the audio transfer rate you selected when you created the project. The actual audio transfer rate might be different from the display if you used the Film and 24p Settings dialog box to change the audio transfer rate.

- **Audio Source Tape TC Rate** allows you to specify the digital audiotape (DAT) timecode format: either 30 fps or 29.97 fps (NTSC only). This timecode format must conform to the timecode format on your original DAT tapes. This setting is active when capturing audio only.

  This setting does not appear in 23.976p projects.
- **Set Pulldown Phase of Timecode** allows you to set a default pulldown phase for a 24p NTSC project. See "Setting the Pulldown Phase" on page 121.

Disabling Video Resolutions

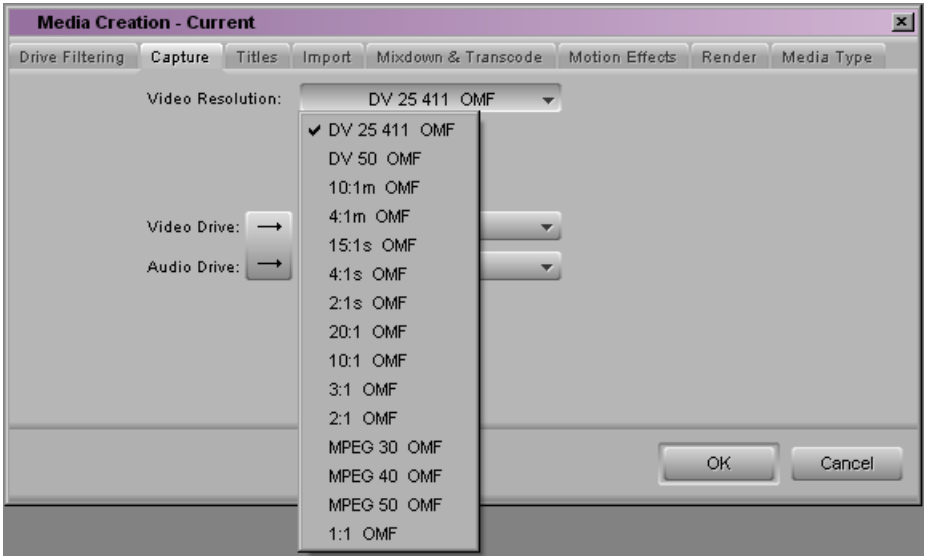
To simplify the options for media creation, you can restrict the resolutions available for capturing, rendering, or importing. To disable resolutions, you need to type the resolutions into a text file. If you disable resolutions for media creation, you can still play, export, or perform a digital cut in those resolutions.

To disable resolutions:

1. Select Tools > Media Creation.

   The Media Creation dialog box opens.

2. Click one of the tabs that includes a Resolutions menu, and note the exact spelling of each resolution you want to disable.

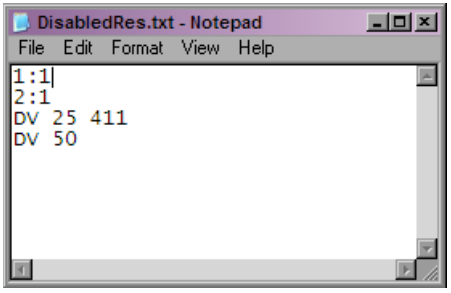


3. Open a text file by doing one of the following:
   - (Windows) Click the Start menu, and then select All Programs > Accessories > Notepad.
   - (Macintosh) Click Go > Applications, and double-click TextEdit.

This file must be a plain text file. On a Windows system, use Notepad; do not use Wordpad. On a Macintosh system, select TextEdit > Preference > Plain Text. Other files might introduce characters that the application cannot recognize.

4. Type each resolution you want to disable on a separate line. Do not include OMF® or MXF.

Windows



Macintosh

The text of the resolution has to exactly match the text in the Media Creation dialog box. If you want to disable DV 25, for example, you need to type DV 25 411 with DV in capital letters.

Do not disable all resolutions supported by the editing application. You need to keep one resolution available.

5. (Windows) Name and save the file:
   a. Select File > Save As.
   b. Type DisabledRes in the File Name text box.
   c. Navigate to Program Files > Avid > *Avid editing application*.
   d. Click Save and close Notepad.
6. (Macintosh) Name and save the file:
   a. Select File > Save As.
   b. Type DisabledRes.txt in the File Name text box.
   c. Navigate to Applications > *Avid editing application.*
   d. Click Save and close TextEdit.
7. If a project is open, close the Project window and open the project again.

   Your Avid editing application reads the DisabledRes.txt file when it opens a project and removes the listed resolutions for all projects and all users.

To enable the resolutions you disabled:

- Navigate to the location of the DisabledRes.txt file and delete it.

Understanding Drop-Frame and Non-Drop-Frame Timecode

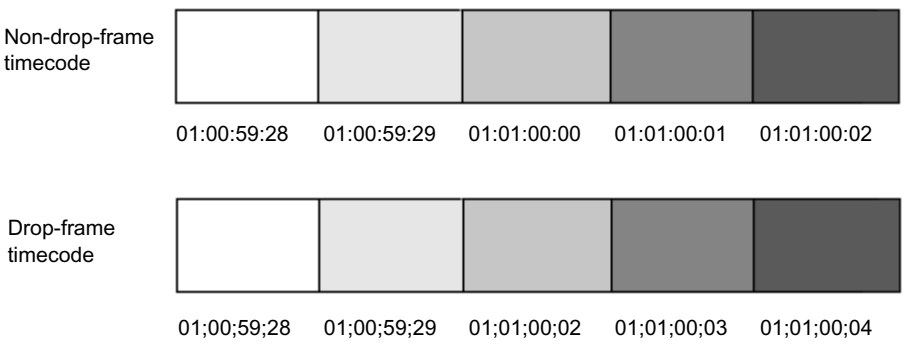
Timecode is an electronic indexing method that denotes hours, minutes, seconds, and frames that have elapsed on a videotape. For example, a timecode of 01:03:30:10 denotes a frame that is marked at 1 hour, 3 minutes, 30 seconds, and 10 frames.

NTSC video (the video format used mainly in the United States) uses one of two formats: *drop-frame timecode* and *non-drop-frame timecode.* Drop-frame (DF) timecode is designed to match the NTSC scan rate of 29.97 frames per second (fps). Two frames of timecode are dropped every minute except for the tenth minute. No video frames are actually dropped. Drop-frame timecode is indicated by semicolons between the digits; for example, 01;00;00;00.

Non-drop-frame (NDF) timecode tracks NTSC video at a rate of 30 fps and is indicated by colons between the digits; for example, 01:00:00:00. Non-drop-frame timecode can be easier to work with, but does not provide accurate timing for NTSC broadcast.

For example, a typical 1-hour show uses 52 minutes of video. If your program ends at 01:52:00:00 (non-drop-frame), and it is broadcast at 29.97 fps, it will last 94 frames too long (approximately 3 seconds). The final credits could be cut off.

The following illustration compares the two types of timecode at the 1-minute mark. No frames are actually dropped.



PAL video (the video format used in many countries other than the United States) uses a scan rate of 25 fps. Timecode is indicated by colons. There is no need for drop-frame timecode in PAL video.

You set the default timecode format for logging clips in the Deck Preferences dialog box. See “Deck Preferences Settings” on page 654. You set the default starting timecode in the General Settings dialog box. See “General Settings” on page 690. In both cases, you can select drop or non-drop.

You can change the starting timecode of a sequence or, for NTSC projects, the type of timecode. See “Changing the Sequence Name and Timecode” in the Help.

Preparing for Audio Input: Advanced

Before capturing, you need to prepare the audio for input. The advanced audio input features include creating your own tone media, setting analog and microphone input options, and adjusting the mix, volume, and pan values with the Passthrough Mix tool. These features are described in this section.

Creating Tone Media

You can create your own tone media as a master clip for editing directly into sequences.

To create tone media:

1. Open a bin.
2. Select Tools > Audio tool.
3.

Click the PH (Peak Hold) menu in the Audio tool, and select Create Tone Media.

   The Create Tone Media dialog box opens.
4. Set the appropriate calibration tone parameters for the project. You can also use the default output tone of –20 dB (digital scale) with a 1000-Hz signal.

If you set the tone media frequency to 0, the system generates random noise. Also, a value of –777 generates a tone sweep.

5. Select the number of tracks of tone you want to create (up to 8 tracks).
6. Click the menus, and select a target bin for the tone master clip and a target drive for the tone media file.
7. Click OK.

   After a few seconds, the media file is created and a master clip appears in the target bin. The default name reflects the options you selected. You can rename the clip by typing a new name.

Using the Passthrough Mix Tool

The Passthrough Mix tool allows you to select the mix and adjust the volume and pan values of the source audio that you monitor. You can adjust the mix, volume, and pan values of multiple monitored channels, controlling either individual channels manually or several channels simultaneously by ganging them together.

The Passthrough Mix tool adjusts monitored audio only and has no effect on the recorded audio signal. You can adjust volume levels within a clip in the Timeline after you record audio by using Audio Gain Automation. For information, see "Using the Audio Mixer Tool" in the Help.

To open the Passthrough Mix tool:

1. Double-click Audio Project in the Settings list of the Project window.

   The Audio Project Settings dialog box opens.

2. Click the Input tab.

3. Click the Passthrough Mix Tool button.

   The Passthrough Mix tool opens.

You can also open the Passthrough Mix tool by clicking the Passthrough Mix Tool button in the Capture tool or the Audio Punch-In tool. For more information, see "Recording Voice-Over Narration Using Audio Punch-in" on page 448.

Resizing the Passthrough Mix Tool

You can use the Number of Mix Panes button to change the display from 4 tracks to 8 tracks. When you select 4 tracks, a button appears that allows you to display the first 4 or last 4 enabled tracks. With the tool minimized, you can continue to adjust levels by selecting a track and typing values by using the numeric keypad on the keyboard or by typing a value in the Volume Level display.

Monitoring Audio with the Passthrough Mix Tool

When you record, you can monitor the mix, volume, and pan values of audio channels with the Passthrough Mix tool.

The Passthrough Mix tool adjusts monitored audio only and has no effect on the recorded audio signal.

To adjust audio in the Passthrough Mix tool:

1. Double-click Audio Project in the Settings list.

   The Audio Project Settings dialog box opens.

2. Click the Input tab.
3. Click the Passthrough Mix Tool button.

   The Passthrough Mix tool opens.

4. Switch the Input Mix Mode button to select a type of input:
   - Select Stereo Mix to mix audio channels to a stereo pair. Use the Stereo Mix Tracks menu to specify which stereo pair to use.
   - Select Direct Mix to send the input signal to its corresponding output channel.

In Direct Mix mode, the Pan Value display and pop-up sliders at the bottom of the Passthrough Mix tool are replaced by Channel Menu buttons.

5. Select the audio channel to be adjusted by doing one of the following:

   - Click the Channel Selection button for the appropriate audio channel.

   - In Direct Out mode, click the Channel Menu button, and select a channel from the menu.

You can select only channels that exist in the source audio.

6. Adjust the volume as needed. You can adjust the volume of multiple channels by clicking the appropriate Gang button. See “Changing an Audio Level in the Passthrough Mix Tool” on page 148.
7. Adjust the pan values as needed. See “Adjusting Pan Values in the Passthrough Mix Tool” on page 148.

Changing an Audio Level in the Passthrough Mix Tool

To change an audio level value in the audio panel in the Passthrough Mix tool, do one of the following:

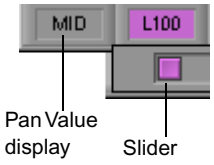
- Click a number along the vertical edge of the Volume Level slider.
- Click the Volume Level slider, and type a value.

  Values are cumulative until you press Enter (Windows) or Return (Macintosh). For example, if you want to enter the value 12, type it. However, if you type 1 and then want to change the value to 2, press Enter (Windows) or Return (Macintosh) before typing the 2.
- Click the Volume Level slider, and drag the slider to a new position.
- Click the Volume Level display, and type a value.
- Alt+click the Volume Level slider to reset the value to 0 dB.

Adjusting Pan Values in the Passthrough Mix Tool

To adjust the pan values in the audio panel of the Passthrough Mix tool:

- Click the Pan Value display to reveal the pop-up slider, and then drag the slider to a new position.



Changing the Audio Hardware Calibration Setting

By default, the Avid editing application is calibrated for analog 0 Volume Unit (VU) to be digital –20 dBFS, which matches the default calibration of the Avid Adrenaline hardware.

You can use the Audio Project Settings dialog box to change your default audio hardware calibration if necessary. However, if you change the application's default, you must recalibrate your audio hardware to match. If the settings do not match, the analog VU (volume unit) scale in the Audio tool displays incorrect values, and the 0 VU display appears in red.

To change the audio hardware calibration setting:

1. Double-click Audio Project in the Settings list of the Project window.
2. Click the Hardware tab.
3. Click the HW Calibration menu, and select a new default hardware calibration setting: –14 dBFS, –18 dBFS, or –20 dBFS.

   A message box opens.

WARNING: Changing the software Hardware Calibration MUST be synchronized with physical changes to your Audio I/O Peripheral.
Help
Cancel
OK

4. Click OK.
5. Change the calibration of the audio hardware, as described in the following sections.

Calibrating Audio Input Channels

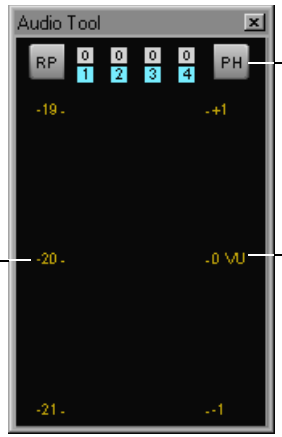
To calibrate input channels for the Avid Adrenaline:

1. Select the desired audio hardware calibration setting, as described in “Changing the Audio Hardware Calibration Setting” on page 148.
2. Connect a sine wave generator that can produce a 1-kHz tone, +4 dB @ 0 VU to XLR channel 1 of the Avid Adrenaline.
3. Send a 1-kHz tone into channel 1.
4. In the Input tab of the Audio Project Settings dialog box, select XLR as the Input source.
5. In the Audio tool, click the In/Out toggle buttons for channel 1 to display I for input.

   You should see a level in the meter display.

6. Select Calibrate from the PH (Peak Hold) Menu button in the Audio tool.

   The Audio tool changes to Calibrate mode: the scales display a range of approximately 2 dB, and the meters indicate levels within this range.



7. Adjust the channel 1 input level by inserting a screwdriver into the Channel 1 trim pot (labeled Gain) on the Avid Adrenaline and turning it until the Audio tool's on-screen meter reaches 0 VU.

   The input channel is now calibrated.

8. Repeat this procedure for each input channel.

To return to the default Audio tool display:

- Click the Peak Hold Menu button, and select Calibrate.

Calibrating Audio Output Channels

If the input channels for the Avid Adrenaline are calibrated correctly, you can use the input channels to calibrate the output channels.

To calibrate output channels for the Avid Adrenaline:

1. Make sure the audio I/O device is calibrated properly for input. See "Calibrating Audio Input Channels" on page 149.
2. Connect two output channels to two different input channels. For example, connect output channels 1 and 2 to input channels 3 and 4.
3. Click the PH (Peak Hold) menu in the Audio tool, and select Set Calibration Tone.
4. Click the In/Out toggle buttons to display I for the channels you are using for input, for example, 3 and 4. Click the In/Out toggle buttons to display O for the channels you are calibrating, for example, 1 and 2.

5. Click the PH menu, and select Calibrate.
6. Click the PH menu, and select Play Calibration Tone.
7. Adjust the Avid Adrenaline trim pots (labeled Gain) on the output channels (1 and 2) to 0 VU, using the meters of the input channels (3 and 4) as your guide.
8. Repeat this procedure for each channel.

Using the Console Window to Check Audio Levels

Once you have played back audio through the Audio tool, you can use the Console window to view a list of precise information about the peak levels.

To check peak levels in the Console:

1. Select Tools > Audio Tool.

   The Audio tool opens.
2. Click the RP (Reset Peak) button to clear the system's record of the most recent maximum peaks.
3. Play a sequence or portion of the sequence.
4. After playing back the audio, open the Console window by selecting Tools > Console.
5. In the Console command line, type:

   `DumpMaxPeaks`

6. Press Enter (Windows) or Return (Macintosh).

   A list of peak values appears in the Console window.

Preparing for Video Input: Advanced

Before capturing, you need to prepare the video for input. The advanced video input features include limitations when using a consumer deck, video input settings, and saving video settings.

Limitation When Using Consumer Decks or Decks Without Time-Base Correctors

This topic describes some difficulties you might encounter when working with consumer video decks and tapes (such as VHS) or decks that do not provide time-base correction or stabilized timing on their outputs. Workarounds are described when available.

Capturing from Unstable Time-Base Sources

The subsystem used in your Avid system is optimized for use with modern, broadcast-quality VTRs that contain time-base correctors (TBCs). When presented with a stable input, the subsystem captures that video by using a high-quality, very-low-jitter clock reference. However, some sources do not include an internal TBC (including various S-Video decks or composite VHS, 3/4-inch, or Hi8™ decks). In some cases, due either to the deck performance or the deck performance in conjunction with a particular videotape, the subsystem will not lock to non-TBC sources. As a result, the image might be unstable or might have reduced or missing color, or syncing might not be possible at all.

If you select SignalLock > Consumer in the Video Input tool, a wider bandwidth (more closely tracking time-base) improves the range of syncing capability. In this mode, the video input levels are set by automatic gain control. Not all of the Video Input tool's adjustment sliders will operate, and the video might be slightly softened, but the syncing in most cases is more reliable and more stable. The overall image quality is not as high as with normal operation.

The Video Input tool is not available on all models. If your model does not have the Video Input tool, the Avid editing application sets the default input options automatically.

If you continue to experience difficulty with a source that does not include an internal TBC, Avid recommends the video signal be processed through an external TBC for maximum image quality. For more information on time-base correctors, contact your Avid Reseller.

Green Line in VHS Video

Some VHS tape decks do not output the full 240 lines of video normally included in the VHS format. As a result, after you capture from a device such as a VCR, a green line might appear at the bottom of the monitors in your Avid editing application.

This line is at the bottom of the visible area of the picture, and is not seen in a standard consumer monitor in most cases. If you use the video in a circumstance in which the line is visible, you can remove it by cropping the bottom edge of the picture.

Saving Video Input Settings

You can save the settings for an individual tape each time you calibrate bars. Saved settings are restored each time you select the same tape for recapturing clips.

The following are the Video Input settings that are saved and restored:

- Level adjustments made with the sliders
- Selection status of the SignalLock or 100% Bars options

Video Input settings do not restore the source format (Composite, Component, S-Video, DV, or SDI). Instead, the source format you select in the Video Input tool remains the default for that project until you select another format from within the project. This allows you to establish a new format on a project basis when moving between systems, or from the offline to the online phase.

The Video Input tool is not available on all models. If your model does not have the Video Input tool, your Avid editing application sets the default input options automatically.

To save the Calibration settings for a tape:

1. After calibrating as described in "Calibrating Video Input" in the Help, click the Settings menu in the Video Input tool, and select Save As.

   The View Name dialog box opens.

2. Accept the default name (matching the tape name), or type a new name for the settings.

If you do not use a name that matches the tape name, the system does not recall the setting automatically the next time you load the tape.

3. Click OK.

Whenever you batch capture or select a tape name during capturing, the system recalls the saved settings as follows:

- The system looks for a Tape setting with the same name as the tape. If the setting exists, the system recalls it.
- If no matching Tape setting exists, the system looks for a setting labeled "Default" and loads that setting. For information on customizing this default setting, see "Saving a Custom Default Setting for the Video Input Tool" on page 154.
- If no matching Tape setting or "Default" setting exists, the Video Input tool is left in its prior state (with the most recent settings applied during the session).

Tape settings and the Default setting are Project settings, and are available to the current project only.

Saving a Custom Default Setting for the Video Input Tool

You can create a default setting that is recalled by the system whenever you load a new tape or when there is no Tape setting that matches a loaded tape.

Whenever you mount a new tape that does not have its own setting, the system recalls these default settings.

The Video Input tool is not available on all models. If your model does not have the Video Input tool, your Avid editing application sets the default input options automatically.

To create a customized default Video Input Tool setting:

1. Select Tools > Video Input Tool.

   The Video Input tool opens.

2. Adjust the Calibration settings, as described in "Calibrating Video Input" in the Help.

3. Click the Settings menu in the Video Input tool, and select Save As.

   The View Name dialog box opens.

4. Type **`Default`**, and click OK. (You must use this spelling and initial capitalization.)

Adjusting Video Levels for Tapes Without Color Bars

Color bars are the best way to set the video levels consistently. However, if you have a tape or series of tapes with no color bars, you might need to adjust levels by using the internal Waveform and Vectorscope monitors.

Calibrate your Client monitor before making these adjustments.

The following table describes the criteria for adjusting video levels by eye, without color bars.

Video Level Adjustment Criteria

Color	Criteria
Blacks	Should not seem flat and lacking detail. Find a series of frames in the footage that include black areas. Shadows work better than black objects. Blacks should fall around 7.5 IRE for NTSC, 0 IRE for NTSC-EIAJ, or 0.3 V for PAL in the Waveform monitor.
Whites	Should not be washed out or lacking detail. Find a series of frames in the footage that include white areas. Bright, well-lit regions work better than white objects. Whites should peak at around 100 IRE for NTSC-EIAJ or 1.0 V for PAL in the Waveform monitor.

Video Level Adjustment Criteria (Continued)

Color	Criteria
Skin colors	Should be realistic. Find a series of frames in the footage that include skin colors. Skin colors should fall generally between the target boxes for the red and yellow vectors in the Vectorscope monitor.
Pure yellows	Should be a rich gold and not reddish or greenish in tone. Find a pure yellow, and adjust both hue and saturation as necessary.
Chroma	Should not exceed 110 or fall below –120 in the Vectorscope monitor.

Using Function Keys When Capturing

The following table lists the default Function key mappings that are available when the Capture tool is active. Capture mode overrides any other functions mapped to these keys. The table lists the default functions. You can change the functions in the Keys tab of the Capture Settings dialog box.

Capturing on-the-fly can cause incorrect pulldown and stuttering playback. Do not use the F1 or F2 keys for capturing 24-fps film that has been transferred to NTSC video unless you have set the correct pulldown phase. See “Setting the Pulldown Phase” on page 121.

Function Keys Available When Capturing

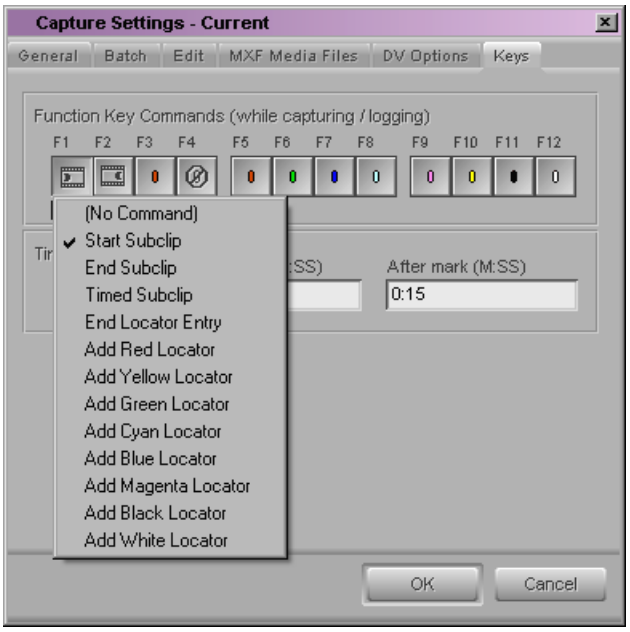
Press	To
F1	Mark the beginning of the subclip while capturing.
F2	Mark the end of the subclip while capturing.
F3, F5 through F12	Add a locator to the current frame while capturing. Each Function key adds a different color locator. See “Adding Locators On-the-Fly” on page 159.
F4	In Capture mode, start the capture process. During capture, end a comment for a locator. In Log mode, press once to mark an IN point. Press again to mark an OUT point to log the clip in the bin.

The Keys tab in the Capture Settings window allows you to customize the commands mapped to the function keys on your keyboard that are used while capturing.

The functions described here apply only in Capture mode. When you are not in Capture mode, function keys operate with their default mappings. For more information on using function keys as keyboard shortcut keys, see ¨Shortcuts¨ in the Help.

To change function key commands for capturing media:

1. Double-click Capture in the Settings tab in the Project window, and click the Keys tab.
2. Click the key you want to map, and then select the new function from the menu.



The Start Capture function is not included in the menu. F4 always starts capture. You can map an additional function to F4 to use after capture starts; End Locator Entry is the default.

3. Click OK.

Special Capture Procedures

This section describes several optional procedures you can use during the capture process.

Logging Errors to the Console Window

The Console window is useful for logging errors that occur during the capture process.

To open the Console window:

- Select Tools > Console.

For more information about the Console, see "Using the Console Window" on page 85.

Consider the following when selecting whether to log errors to the Console during capture:

- If the option "Log errors to the console and continue capturing" is selected on the Batch tab of the Capture Settings dialog box, when you batch capture and the system encounters an error, it aborts the clip, enters error comments into the Console, and continues capturing the next clip.
- If the option "Log errors to the console and continue capturing" is not selected, a message appears and the system pauses if an error occurs while capturing. If this happens, do the following:
    a. Click Try Again to retry the operation. The clip might capture successfully.
    b. If the clip does not capture the second time you try, the error message appears again. Click Next Clip to bypass the clip that caused the error, and continue batch capturing any remaining clips, or click Abort to cancel the entire batch capturing process.

Note all errors, messages, and steps you have taken. Try to troubleshoot the problem on your own, or contact Avid Customer Support.

Creating Subclips While Capturing

Subclips are marked sections of a longer master clip you can view and edit like any other object in a bin. This section describes two methods for creating subclips while capturing: by creating subclips on-the-fly and by creating timed subclips. The maximum number of subclips you can generate while capturing a clip is 100.

For information about creating subclips after capturing, see "Creating Subclips" in the Help.

When subclips are created in 24p or 25p projects, they are always created as "hard" subclips. This means you cannot trim past the edges of the subclip when adjusting transitions and edits. Hard subclips prevent film-tracking information errors for editing and cut lists.

To create a subclip on-the-fly:

1. Start capturing.
2. At the point where you want the subclip to begin, press the F1 key.

   This highlights the subclip IN point.
3. While you capture, you can type a name for the subclip. Press the Tab key to type comments about the clip.
4. When you want the subclip to end, press the F2 key.

   This highlights the subclip OUT point.

You can press the F2 key repeatedly as you search for the end point of the subclip. The system accepts the last occurrence as the end point. You can also press the F1 key at any time before pressing F2 again to remove the previous subclip marks and to start a new subclip IN point.

   The subclip appears in the target bin when you stop capturing.

   When capture is complete, a number appears between the subclip indicators to show the number of subclips created.

For NTSC film-to-tape transfers, you must log the correct pulldown phase before you create subclips. For more information, see "Setting the Pulldown Phase" on page 121.

If your Avid editing system is an asset manager client in an OMF workgroup, and you are capturing with shared volume segmentation ("chunking") enabled, see your Avid Unity documentation for details on the capture procedure.

If your Avid editing system is an asset manager client in an MXF/AAF workgroup, you cannot create subclips while capturing media using the Capture tool. However, you can use the Frame Chase editing feature when capturing media from a supported external device using Avid Interplay Transfer. For more information about using Frame Chase editing, see "Using Frame Chase Editing" in Avid Interplay Best Practices.

Creating Timed Subclips While Capturing

You can capture a subclip of a preset duration. The Keys tab in the Capture Settings window allows you to specify the duration of a subclip that is automatically created when you press a function key mapped to the Timed Subclip button. IN and OUT points are created at predetermined intervals before and after the point you mark in the source media by pressing the Timed Subclip button.

For information on mapping capture functions to function keys, see "Using Function Keys When Capturing" on page 155.

To set the duration of a timed subclip:

1. Double-click Capture in the Settings tab in the Project window, and click the Keys tab.

   The Keys tab in the Capture Settings window appears.
2. Enter the time in minutes and seconds to be used by the timed subclip in the Before mark (M:SS) and the After mark (M:SS) text boxes.
3. Click OK.

To create a timed subclip:

1. Start capturing.
2. At the point where you want to start a timed subclip, press the mapped function key.

   This highlights the subclip IN and OUT points, and the subclip is created automatically.
3. While the system is capturing, you can type a name for the subclip. Press the Tab key to type comments about the clip.

Adding Locators On-the-Fly

Locators mark a single frame within a clip or sequence so you can attach a note or find the frame at a later time. This section describes a shortcut method of adding locators on-the-fly while capturing. When the Capture tool is active, eight colored locators are mapped to eight Function keys on the keyboard: F5–F12. Also, the End Locator Entry key is mapped to F4. The locators override any other functions mapped to these keys.

To add a locator to a frame while capturing:

1. Start capturing.
2. Watch the playback of the footage in the monitor, and press one of the locator keys (F5–F12) when you see the shot or frame with which you want to associate a locator.

   A default name and number for the locator appear in the Name text box in the Capture tool.
3. While you capture, you can add comments for the locator. Press the Tab key to move the cursor to the Comments text box, and type your comment.
4. When you finish adding your comment for the locator, press the F4 key (End Locator Entry).

   The Name and Cmnt (Comment) text boxes revert to association with the master clip or the subclip being captured.

Locator comments appear in the Locators window. To see the locator comments, open the Locators window as described in "Viewing Locators in the Locators Window" on page 336.

If your Avid editing system is an asset manager client in an OMF workgroup, and you are capturing with shared volume segmentation ("chunking") enabled, see your Avid Unity documentation for details on the capture procedure.

If your Avid editing system is an asset manager client in an MXF/AAF workgroup, you cannot create locators while capturing media using the Capture tool. However, you can use the Frame Chase editing feature when capturing media from a supported external device using Avid Interplay Transfer. For more information about using Frame Chase editing, see "Using Frame Chase Editing" in Avid Interplay Best Practices.

For more information about locators, see "Using Locators" on page 331.

Naming a New Tape from the Keyboard

You can name a new tape without taking your hands off the keyboard.

To create a new tape name by using a keystroke in Capture mode:

1. Select Tools > Capture.

   The Capture tool opens.
2. Do one of the following:
   - Put a tape in the deck
   - Click the Source Tape Display button.

   The Select Tape dialog box opens.

3. Press Ctrl+N (Windows) or ⌘+N (Macintosh).

   A new tape name text box opens.

4. Type the new tape name.
5. Press Enter (Windows) or Return (Macintosh) to register the tape name.
6. Press Enter (Windows) or Return (Macintosh) or click OK to close the Select Tape dialog box.

Controlling Decks from the Keyboard

You can use the J-K-L keys to control a deck from the Capture tool, Digital Cut tool, and Deck Controller window.

The J-K-L keys work the same as they do in the Source and Record monitors. See "Playing Footage with the J-K-L Keys (Three-Button Play)" on page 242, as shown in the following table.

J-K-L Functions for Deck Control

Press	To
K	Stop the deck.
L	Shuttle the deck at 1x, 2x, 3x, 5x, 8x, 16x, or 24x normal speed.
J	Shuttle the deck at –1x, –2x, –3x, –5x, –8x, –16x, or –24x normal speed.
K+L	Shuttle the deck at 0.25x normal speed.
J+K	Shuttle the deck at –0.25x normal speed.

The following restrictions apply:

- The Capture tool, Digital Cut tool, or Deck Controller window must be selected for keys to be active.
- Single-field stepping is not supported.
- If you remap the function of the J-K-L keys, you can no longer control decks with those keys.

Mapping the Record Button

You can map the Record button from the Play tab in the Command palette to a key on the keyboard. This allows you to start capturing by pressing a key.

The Record button works for either the Capture tool or the Audio Punch-In tool, depending on which tool is active.

For more information on mapping buttons, see "Understanding Button Mapping" on page 80.

Ejecting Tapes with a Button or Key

By clicking the Eject button and ejecting a tape, the fact that the tape must be changed can be brought to the attention of any tape operator in a remote machine room.

To eject tapes by using a button:

1. Select Tools > Command Palette.
2. Click the Play tab.
3. Select Active palette.
4. Click the Eject button.

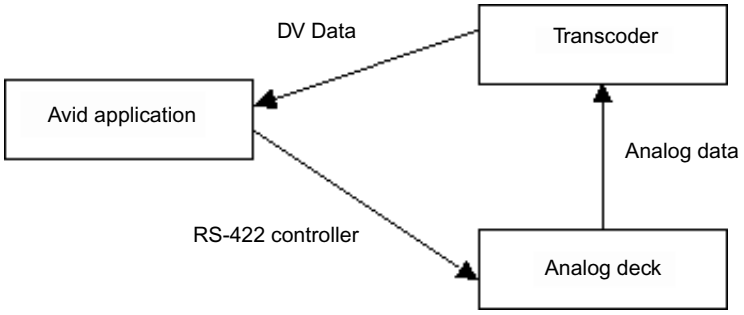
You can map the Eject button to any button on the Tool palette or any key on the Keyboard palette. See "Mapping User-Selectable Buttons" on page 81.

Returning to the Previous Place in the Select Tape Dialog Box

When working with many tapes, you need to be able to return quickly to your location when you last selected a tape. If you leave the Select Tape dialog box and reenter it, you return to where you were in the list of tape names the last time; this should help you find the next tape you need.

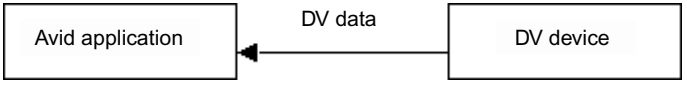
Understanding DV Capture Offset

DV capture offset allows you to offset the incoming DV stream against the timecode assigned to each frame during capturing. This offset is only used in a transcoder configuration or in configurations where the DV stream does not encode timecode into the incoming DV frames. DV capture offset was primarily designed for configurations where an RS-422 controller is used to control a DV device and the DV stream is captured over a FireWire cable.



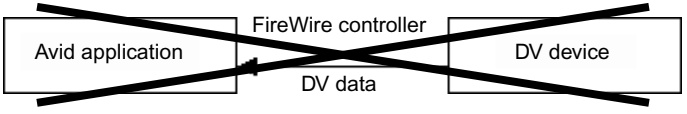
RS-422 Controls a DV Device Configuration

The DV capture offset can also be used in a configuration where the DV stream is captured over a FireWire cable, but the timecode of the master clip is not received through an RS-422 controller. When you adjust the DV capture offset in this configuration, results could vary, depending on the number of devices involved. See the following figure.



FireWire Configuration Without Timecode

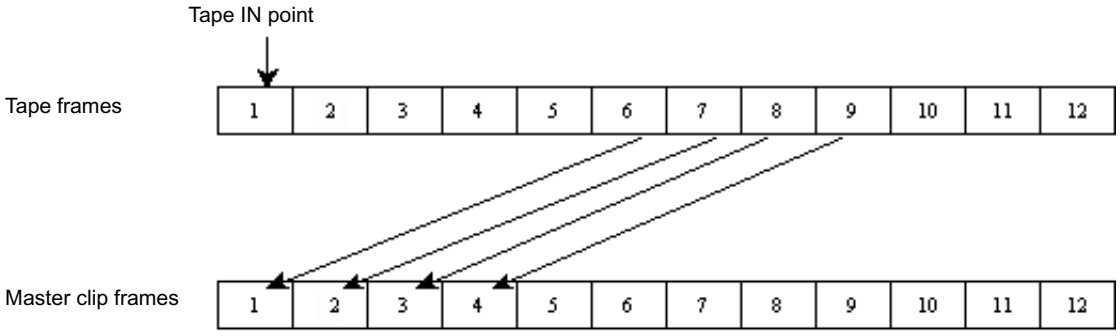
A configuration in which FireWire control is used to control a DV device and the DV stream is captured does not use this offset. The following figure shows this configuration, where the DV frames contain the encoded timecode.



FireWire Configuration with Encoded Timecode

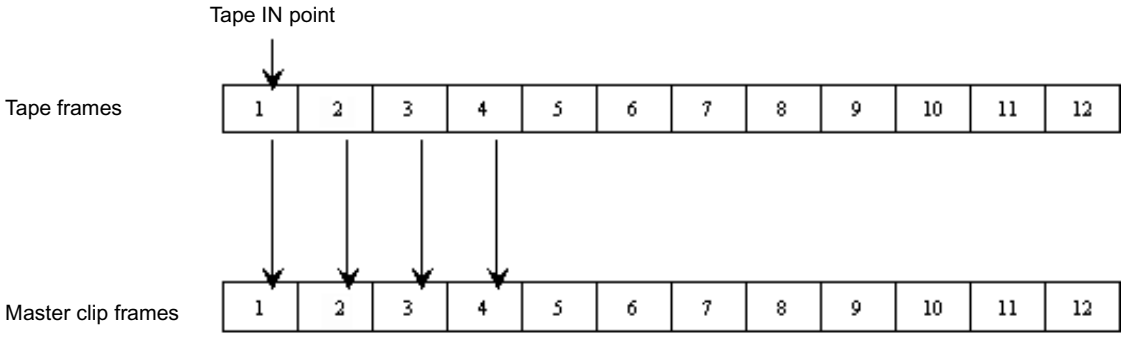
The range of DV capture offset in the Avid application is from –6 to 24 frames with the default value set to 0. To use DV capture offset, perform several captures with the DV capture offset set to 0. Note the first frame of the master clip for each clip. If the first frame of the master clip is not as expected, the DV capture offset should be adjusted to account for this variation.

For example, The following figure represents a RS-422-controlled capture where the timecode for capture comes in through an RS-422 controller. The first frame of the master clip is the sixth frame from the IN point on the tape.



Capture with No Offset

To adjust for this device behavior, set the DV capture offset to –6 frames. The result should be a frame-accurate capture. However, the results are dependent on device behavior. If the device behavior for sending streams across a FireWire cable is inconsistent, frame-accurate results on capture will also be inconsistent. See the following figure.



Capturing DV Material with Offset

To offset the sequence for capture:

1. Click the Settings tab in the Project window.
2. Double-click Deck Preferences.
3. Determine the approximate offset, and then enter the offset in the Capture Offset (frames) text box.
4. Click OK.

   The delay is reflected in the DV Capture Offset box in the Capture tool.
5. Capture your material.

   See “Capturing from a Mark IN to a Mark OUT” and “Capturing On-the-Fly” in the Help.
6. Repeat this process until you achieve the appropriate offset.

Delaying Audio

Sometimes the source from which you are capturing provides an audio signal that is one or more frames ahead of the video. For example, the Panasonic AG-DVX100 DV camcorder always records audio one frame ahead of the video. Also, the use of a timebase corrector (TBC) or other video processing devices on your input signal might introduce fixed frame delays of video.

If the input signal is not DV when you choose your IN point, the audio that lines up with the IN point should remain in sync with the captured media. The video is what shifts in the captured media. If the input signal is a DV signal however, then the audio shifts.

If the audio you are capturing is always at a fixed offset ahead of the video, use the Delay Audio feature to correct this problem and produce a master clip with correct A/V sync.

To offset your audio:

1. Prepare for capturing audio. See “Capturing Media: Basics” and “Preparing for Audio Input” in the Help.
2. Select Tools > Capture.
3. Select the number of offset frames from the Delay audio menu.
4. Capture your material.
5. Play the captured media to verify that the audio and video are in sync.

Live Capture with External Timecode

LTC (longitudinal or linear timecode) from an external source allows production facilities to capture from multiple sources at the same time they are recording to tape. A facility that has a central timecode generator can use that clock to send identical timecode to all systems. This timecode output can be run directly to the Avid system through the LTC IN connection on the Avid Adrenaline hardware.

External timecode is especially useful for live events, dramatic multicamera shows, and video material coming in on routers that do not support timecode through normal RS-422 communication. You can start editing immediately after the shooting without waiting to capture from the backup reference tapes.

If you are capturing 24p film however, the pulldown phase needs to be accounted for. This allows for 24p capture to have the same behavior as a video rate. What you select in the Set Pulldown Phase of Timecode (A, B, X, C, or D) in the Film and 24p Settings window determines what type of pulldown the system uses during the 24p capture.

Only non-drop-frame timecode is supported with the Pulldown Phase of Timecode option.

If you are taking a feed from a source based on a time-of-day timecode generator, setting IN and OUT points is especially useful. When the time of the external timecode source matches the IN point, the Avid system begins to capture. Capturing stops when the external timecode matches the OUT point.

To prepare for capturing with external timecode:

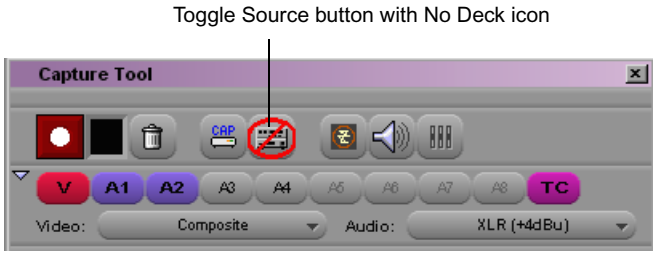
1. If capturing 24p film, in the Film and 24p settings dialog box, select Set Pulldown Phase of Timecode 00:00:00:00.
2. Select a pulldown cadence that matches the pulldown cadence of the incoming signal.

For more information, see "Setting the Pulldown Phase" on page 121.

3. Click OK.
4. Select Tools > Capture.

   The Capture tool opens.

5. Click the Toggle Source button until the No Deck icon appears.



6. Click the TC Source menu, and select LTC Input.

   The menu contains two other choices:

   - **Internal:** Uses internal system timecode.
   - **Auto Detect:** Detects LTC input by default. If the LTC input is deactivated, the Capture tool automatically switches to internal timecode. If the LTC input is reactivated, the Capture tool switches back to LTC input.

LTC is only available with Avid Adrenaline products. If you do not have an Avid Adrenaline attached to your system, the LTC Input option is grayed out.

7. Capture by using any of the techniques described in “Capturing Media:Basics” in the Help.

If you notice your captured material is consistently one or more frames off, use the “Latency for external timecode mode” option in the Capture Settings dialog box to fix the problem. See “Capture Settings” on page 636.

You can log an event ahead of time and it automatically starts recording that signal when the internal clock or external LTC arrives at that timecode. For example, log a clip at 14:00:00:00 to14:30:00:00 sometime before 2:00 pm. The capture starts at 2:00 pm and ends at 2:30.

Capturing to the Timeline

You can capture footage directly from tape to a sequence loaded in the Timeline in one step, bypassing several steps such as organizing and reviewing clips, marking edit points, and performing edits.

To capture to the Timeline:

1. Prepare for capturing.

   See “Capturing Media:Basics” in the Help.

2. Set options in the Capture Settings dialog box:

   a. Click the Settings tab in the Project window.

   b. In the Settings list, double-click Capture.

      The Capture Settings dialog box opens.

   c. Click the Edit tab.

   d. Select the “Enable edit to timeline (splice, overwrite)” option.

   e. Set the handle length (the amount of footage you want to capture before and after the IN and OUT points of the clips).

   f. Click OK.

3. Load a sequence into the Record monitor.

4. (Option) Patch tracks you are capturing (source tracks) to the tracks in your sequence (record tracks). See “Patching When Capturing to the Timeline” on page 169.

5. Mark an IN point in the sequence or move the position indicator to where you want the edit to take place.

6. Mark the source material you want to capture by using the Capture tool logging controls. For a description of the controls, see “Logging with Avid-Controlled Decks” on page 113.

7. (Option) Mark an OUT point based on the following:

   - If you are recording to the middle of a sequence in the Timeline, mark both IN and OUT points for frame accuracy.
   - If you are recording to the end of a sequence, you can mark just an IN point and then mark the OUT point later on-the-fly.

8. Click the yellow Splice-in button or the red Overwrite button in the Capture tool to select the type of edit.

9. Click the Record button to begin recording.
10. If you did not mark the OUT point in advance, click the Record button again when the footage reaches the appropriate frame.

    If you already marked an OUT point, recording stops automatically.

When capturing ends, the clip appears in place in the sequence, and a master clip appears in the bin.

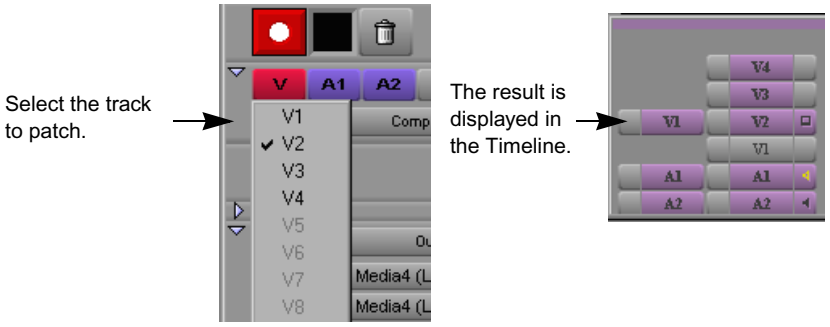
Patching When Capturing to the Timeline

By default, the tracks you selected for capturing (V1, A1, A2, and so on) are edited to the corresponding tracks in the Timeline. You can patch the captured footage to any track in the Timeline.

To patch tracks when capturing to the Timeline:

1. In the Capture tool, click and hold the Track Selector button for the track (video or audio) you want to patch.
2. From the menu, select the track to which you want to patch the captured footage.

For example, if you want to capture video footage to track V2, click and hold the red V button in the Capture tool and select V2 from the menu. The Track Selector panel in the Timeline displays the resulting patch.



You can also patch tracks in the Timeline in the same way you patch tracks when editing from the Source monitor. See "Patching Tracks" in the Help.

Only tracks that are enabled in the Timeline are available for patching. Other tracks appear dimmed in the menu.

Capturing Video Without Pulldown into a 24p NTSC Project

Film-to-tape transfers that were made without using pulldown can be captured directly into a 24p project. This feature is useful when special effects are generated on a frame-to-frame basis to tape, and need to be integrated into a 24p project.

Before capturing the footage, click the Film to Video Transfer menu in the Film and 24p Setting dialog box, and select Video Rate. The Film-to-Video Transfer setting allows you to specify the type of film-to-tape transfer you are capturing. For more information, see "Settings for Film and 24p Projects" on page 140.

For normal 24-frame capture, click the Film to Video Transfer menu in the Film and 24p Settings dialog box, and select Pulldown.

Remote Play, Capture, and Punch-In

The Remote Play and Capture feature allows you to use an external edit controller with an Avid editing system. Remote Play and Capture covers three basic functions:

- *Remote Capture* controls the capturing of media into an Avid editing application while using an edit controller. Remote Capture allows you to record and stop.
- *Remote Play* controls sequences loaded in the Record monitor and played back through an edit controller to the edit room, along with other sources. Remote Play allows you to cue, play, and stop.
- *Remote Punch-In* controls the recording of audio into the Avid editing system while using an external edit controller. You can use Remote Punch-In to cue, play, record, and stop.

External capture control is included in the Remote Play and Capture feature. When you select Remote Capture or Remote Punch-In in the Remote Play and Capture Settings dialog box, the Avid editing system performs like a VTR and waits for an external controller to operate the capture functions.

You must be in Deck Offline mode to use Remote Capture. For information on Deck Offline mode, see "Capturing from a Non-Avid-Controlled Deck" in the Help.

To use Remote Play and Capture, you must connect a supported controller (any controller that uses Sony® serial control protocol) to the system by using a special Avid 9-pin VTR emulation cable and a serial adapter.

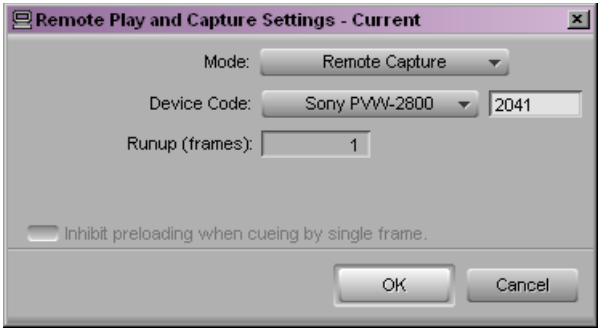
If a message appears stating that the Avid Serial Driver is not installed for Remote Play and Capture, make sure the correct serial driver is installed on your system. If you are running Avid Media Browse™ and using the Remote Play and Capture option, you need to run the Avid editor with the Microsoft driver. If you are running the Avid editor (without Avid Media Browse), the Avid serial driver should be installed. See "Avid Serial Driver and Remote Play and Capture (Windows Only)" on page 176 for information on how to install the serial drivers.

Selecting Remote Play and Capture Settings

To open the Remote Play and Capture Settings dialog box:

1. Double-click Remote Play and Capture in the Settings list.

   The Remote Play and Capture Settings dialog box opens.



2. Click the Mode menu, and select Remote Play, Remote Capture, or Remote Punch-In.

For information about each option, see "Remote Play and Capture Settings" in the Help.

Enabling Remote Capture

Before you enable Remote Play and Capture, be sure the controller is properly connected.

To enable Remote Capture:

1. Double-click Communication (Serial) Ports in the Settings list of the Project window.

   The Communication (Serial) Ports tool opens.

2. Select Remote Play and Capture > *port*.
3. Close the Communication (Serial) Ports tool.

   The system saves the setting as a Site setting, effective for all projects.

4. Double-click Remote Play and Capture in the Settings list of the Project window.

   The Remote Play and Capture Settings dialog box opens.

5. Select Mode > Remote Capture.
6. Select Device Code > *device*.
7. Specify the time (measured in frames) it takes the deck to start playing from a cued position in the Runup area.
8. Select Special > Remote Play and Capture when you are ready to capture.

   A check mark appears next to the command to indicate that the system is ready. A yellow outline appears around the Play button in the Source/Record monitor to indicate that Remote Play and Capture is active.

The Remote Play and Capture command behaves like a Local/Remote switch on a playback device, with the VTR in Local mode by default when you start the system.

9. Select Tools > Capture.

   The Capture tool opens.

10. Select the tracks onto which you want to capture by clicking the Channel Selection buttons.
11. Choose Bin > *bin*.
12. Click the Toggle Source button until the Deck Offline icon appears.

13. Control capturing from the controller.

Enabling Remote Play

Remote Play allows you to control sequences through an edit controller. You can play, cue, and stop your sequence from the edit controller.

To enable Remote Play:

1. Double-click Remote Play and Capture in the Settings list of the Project window.

   The Remote Play and Capture Settings dialog box opens.

2. Select Mode > Remote Play.
3. Select Device Code > *device*.

Avid recommends that you do not inhibit preloading under normal circumstances. For more information about the inhibit preloading option, see "Remote Play and Capture Settings" in the Help.

4. Select Special > Remote Play and Capture when you are ready to use the system for playing.

   A check mark appears next to the command to indicate that the system is ready. A yellow outline appears around the Play button in the Source/Record monitor to indicate that Remote Play and Capture is active.

The Remote Play and Capture command behaves like a Local/Remote switch on a playback device, with VTR in Local mode by default when you start the system.

5. With a sequence loaded in the Record monitor, use the Play, Cue, and Stop buttons on the edit controller to control the sequence.

At this time, fast-forward, rewind, and shuttle and jog are not enabled from the edit controller.

Setting up Your System for Remote Punch-In

Before you enable Remote Punch-In, you need to make sure the controller is properly connected. The only qualified controller for Remote Punch-In is the Colin Broad SR-4 Serial Remote, and you must set the following options on the SR-4 controller:

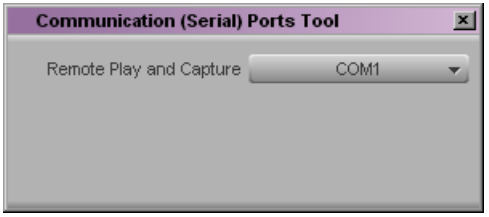
- 049 — Send Record In and Out to Machine set to 1=Yes
- 065 — Locate Type set to 0=Locate
- 077 — Extended Status Request set to 1=Off

In addition, all devices controlled by the SR-4 must be genlocked, and your Avid editing system must be configured as the Master device on the SR-4. For more information on configuring the Colin Broad SR-4 Serial Remote, see the documentation for your controller.

To record audio using Remote Punch-In:

1. Double-click Communication (Serial) Ports in the Settings list of the Project window.

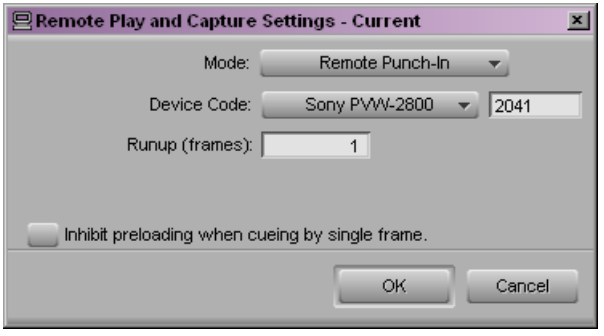
   The Communication (Serial) Ports tool opens.



2. Click the Remote Play and Capture menu, and select the appropriate port.
3. Close the Communication (Serial) Ports tool.

   The system saves the setting as a Site setting, effective for all projects.
4. Double-click Remote Play and Capture in the Settings list of the Project window.

   The Remote Play and Capture Settings dialog box opens.



5. Select Mode > Remote Punch-In.
6. Click the Device Code menu, and select the appropriate device.
7. (Option) Specify other settings as described in “Remote Play and Capture Settings” on page 715.
8. Click OK.

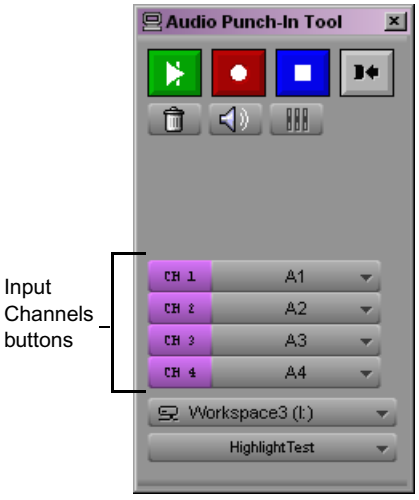
9. Select Clip > Remote Play and Capture when you are ready to use the system for capturing.

   A check mark appears next to the command to indicate that the system is ready. A yellow outline appears around the Play button in the Source/Record monitor to indicate that Remote Play and Capture is active.

The Remote Play and Capture command behaves like a Local/Remote switch on a playback device, with the VTR in Local mode by default when you start the system.

10. Select Tools > Audio Punch-In.

    The Audio Punch-In tool opens.



Some of the features in the Audio Punch-In tool — such as the preroll and postroll options — do not appear when you open the tool in Remote Play and Capture mode.

11. Select the tracks you want to record to by clicking the Input Channels buttons.
12. Load a sequence in the Source monitor.
13. Using the controls on the external controller, set an IN point in the Timeline.

Setting an OUT point is optional.

If you set the IN point at the first frame of the sequence, you must add filler to the start of the sequence equal to the amount of preroll. This allows the system to sync lock the Avid editing application to the external controller.

14. Control recording from the controller.

Remote Punch-In does not use preroll or postroll settings, and it does not initiate a loop playback or audition playback prior to recording. Remote Punch-In begins recording audio to the selected channels as soon as you start the record operation.

Avid Serial Driver and Remote Play and Capture (Windows Only)

When your Windows installation occurs, two serial drivers are installed: *msports.inf* and *serial.sys*. When an Avid editing application is installed, two additional serial drivers are installed: *msportsAvid.inf* and *Avidxpserial.sys*. When you run the Avid editing system, the Avid drivers are used. However, if you are using Avid Media Browse and Remote Play and Capture, you need to change the system's serial driver to the Microsoft drivers. The steps below explain how to choose a serial driver for your application.

To install or change the system's serial driver:

1. Quit the Avid editing application.
2. Right-click the My Computer icon, and then choose Manage.

   The Computer Management window opens.
3. Click Device Manager in the left pane.
4. Expand the Ports (COM & LPT) by clicking the plus sign (+) in the right pane.
5. Double-click the Communications Port you are using.

   The Communications Port Properties dialog box opens.
6. Click the Driver tab.
7. Click the Update Driver button.

   The Hardware Upgrade Wizard opens.
8. Select "Install from a list or specific location (Advanced)," and then click Next.
9. Select "Don't search. I will choose the driver to install," and then click Next.
10. Select the appropriate driver:
    - Select the Microsoft driver when using Avid Media Browse
    - Select the Avid Serial driver when using an Avid editing application.
11. Click Next, and then click Finish.
12. Restart your system.

Relinking Clips by Key Number

The film-tape-film-tape (FTFT) relinking feature lets you re-create an offline, film-originated sequence as a final finished sequence by using the key numbers of the original film footage. During the offline stage, you capture and edit footage that was transferred to tape through a one-light or best-light telecine transfer (FT). During the finishing stage, you batch capture, relink by key number, and edit footage that was transferred through a second timed, color-corrected telecine transfer (FT). Alternatively, if you are finishing a sequence in an online suite and need only an EDL, you do not need to batch capture the footage. Just import the new shot log, relink to the offline items, and then create the EDL.

Relinking by key number eliminates the need for the telecine transfer facility to match the timecode and pulldown of the second transfer to the timecode of the first transfer.

For more information about relinking, see "Relinking Media Files" on page 269.

To relink clips by key number:

1. After you have finished editing the offline sequence, use the FilmScribe™ application to create a pull list of the clips used in the sequence. (For information on using FilmScribe, see the FilmScribe documentation.)
2. Have the telecine facility use the pull list to pull selects from the original negative and to transfer picture-only footage by using a timed, color-corrected telecine process. You do not need to transfer audio again. The telecine facility supplies a new shot log file along with the transfer tape.
3. In your original project, create a new bin.
4. Duplicate the edited offline sequence and move it to the new bin.

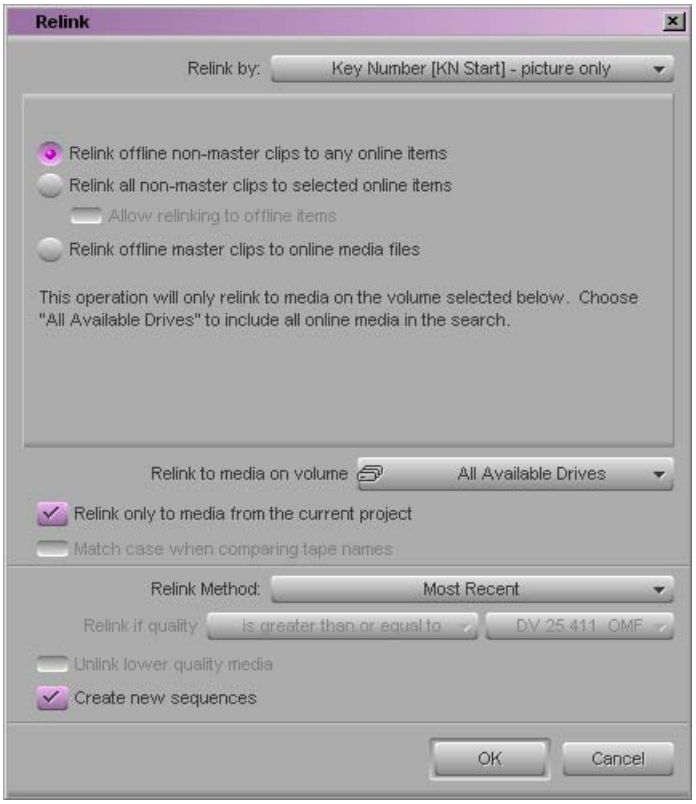
   At this point, the duplicate sequence is still linked to the original media.

Duplicate your sequence before relinking. If you relink to the original sequence, you will lose your links to the original media.

5. Process the new log file through ALE and import it into the bin that holds the duplicated sequence. (For more information, see "Preparing Log Files for Import" on page 90 and "Setting the Pulldown Phase" on page 121.)
6. (Option) Batch capture the clips imported from the new log file. Select 1:1 or another high-quality resolution. (For more information, see "Batch Capturing from Logged Clips" in the Help.)
7. Select the duplicated sequence and the new clips.

8. Select Clip > Relink.

   The Relink dialog box opens.


Relink
Relink by:
Key Number [KN Start] - picture only
Relink offline non-master clips to any online items
Relink all non-master clips to selected online items
Allow relinking to offline items
Relink offline master clips to online media files
This operation will only relink to media on the volume selected below. Choose "All Available Drives" to include all online media in the search.
Relink to media on volume
All Available Drives
Relink only to media from the current project
Match case when comparing tape names
Relink Method:
Most Recent
Relink if quality
is greater than or equal to
DV 25 411 OMF
Unlink lower quality media
Create new sequences
OK
Cancel

9. Select Relink > Key Number [KN Start] - picture only.
10. Select the “Relink all non-master clips to selected online items” option.
11. (Option) If you did not batch capture the original clips, select the “Allow relinking to offline items” option.
12. In most cases, select the “Relink only to media from the current project” option.

    Deselect this option if you know the new clips were captured with a different project name. Also, if the sequence does not relink to the new clips, try deselecting the option and relinking again.
13. Click OK.

    The new clips are linked to the sequence.

    If you duplicated the offline sequence, the offline sequence is still linked to the original clips. If you did not duplicate the sequence, you relink it to the original clips.

To relink a sequence to the original clips:

1. Duplicate the sequence.
2. Create a new bin and move the sequence to the bin.
3. Locate the original clips. Look for a bin with the original clips, or use the Media tool to locate the original clips.

For information on the Media tool, see "Using the Media Tool" in the Help.

4. Copy the clips to the bin that contains the duplicated sequence.
5. Select the sequence and the original clips.
6. Relink the clips by key number.

Modifying the Pulldown Phase After Capturing

If you have captured film-originated clips (NTSC transfer only) that seem to stutter, the problem could be an incorrectly logged pulldown phase. The pulldown phase is the video frame at which the master clip starts: A, B, X, C, or D. You log this pulldown phase in the "Pullin" column of a bin. To solve the problem, you need to determine the correct pulldown cadence of the frame, modify the clip information, and recapture the clip.

You can also determine the correct pulldown phase from the original tape. See "Entering Pulldown Information" on page 126.

To check for an incorrect pullin frame:

1. Look for a section of the clip that includes a series of frames with motion.
2. Step through the clip frame by frame (using the Step buttons or another method) and look for two frames that have no movement.

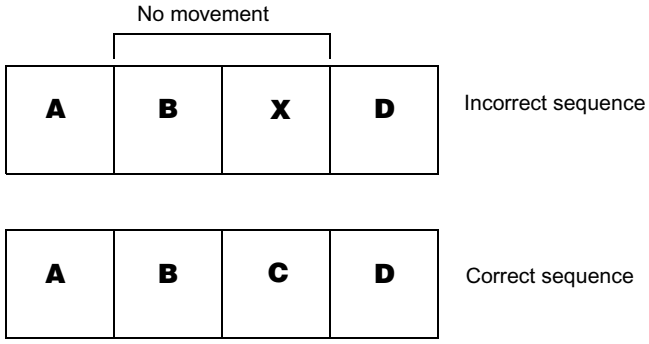
   If the pattern is two frames of movement followed by two frames of no movement, the pullin is incorrect.

To determine the correct pullin frame, use one of the following approaches:

- If the source footage includes burn-in code with the pulldown phase, go to the start of the clip and look for the pulldown for the first frame.
- If you want to maintain the start timecode for each clip, review the original tape field by field, using the procedure described in "Entering Pulldown Information" on page 126.
- If you do not need to maintain the start timecode:

  a. Step through the clip frame by frame (using the Step buttons or another method). Look for two frames that are identical (no movement).

  b. Think of these frames as frames B and X of a four-frame series.



  Step backward (either one frame from the B frame or two frames from the X frame) to locate the correct A frame. Note the last digit of its timecode. Timecode for all A frames in the clip will start either with this digit or this digit plus 5. For example, if the A frame has the timecode 1:00:10:20, timecode for all A frames in the clip ends in either 0 or 5.

  c. Compare these digits with the last digit of the start timecode (first frame) of the clip to determine the correct pullin. For example, if the A frame ends in 0 or 5, and the start timecode ends in 4, the pullin is D.

  d. If the pullin for the clip is the X frame, you need to modify the timecode to produce a number you can associate with a pullin. For example, if the A frame ends in 0 or 5, and the start timecode ends in 2, the pullin falls on the X frame and you need to modify the timecode along with the pullin. Move forward one frame to create a start timecode ending in 3. Then you can change the pullin to C.

When you change the timecode of a clip, you lose the key number of the clip and need to enter it in the bin, adjusting it to match any changes to the timecode.

After you determine the pullin frame, modify the clip information as follows.

To modify the clip information:

1. In a bin, select the clip you want to modify and press the Delete key.

   The Delete dialog box appears.

2. Deselect the option “Delete master clip(s)” and select “Delete associated media file(s).”
3. (Windows only) Select the resolutions to delete.
4. Click OK.

   The original media file is deleted.

5. Make sure the clip is still selected. Press Ctrl+Shift and choose Unlink from the Clip menu.

   The clip information is unlinked and you can modify the clip information.

6. Type the correct letter for the pulldown phase in the Pullin column. If necessary, type a new timecode and key number.

   For multiple clips, you can use the Modify command or the Modify Pulldown Phase command. See “Modifying the Pulldown Phase Before Capturing” on page 128.

With the new clip information in the bin, batch capture the clip. See “Batch Capturing Clips” in the Help. If the pulldown phase is accurate, the clip should play smoothly, with no repeated frames.

This method might not work for some clips that start with either an A frame or a D frame. If, after you modify the clip as described previously, the clip still stutters, modify the clip again. This time, if the pullin is A, change it to D. If the pullin is D, change it to A.

DV and HDV Scene Extraction

While you are capturing DV or HDV footage, the DV and HDV Scene Extraction feature allows you to generate subclips and locators automatically, based on time-of-day (TOD) information contained in the DV or HDV format.

Discontinuities in the DV or HDV TOD metadata indicate each place in a master clip or subclip where a new take was initiated on a DV or HDV camera. Using this feature, you can capture an entire DV or HDV tape as a single master clip and have the system automatically locate all the takes for you, eliminating the need to manually log.

You can perform a DV Scene Extraction in two ways and an HDV Scene Extraction one way:

- Set up the DV or HDV Scene Extraction option before capturing. When capturing is performed, subclips and locator marks appear in the bin.
- Perform DV Scene Extraction after capturing. Select those clips in the bin for which you want to generate subclips and locator marks.

Consider the following:

- You can perform DV Scene Extraction on any existing clip or subclip in a bin that has TOD information breaks.
- DVCPRO format does not provide TOD metadata; you cannot use DV or HDV Scene Extraction with DVCPRO format.
- DV or HDV Scene Extraction does not work on non-DV or audio-only clips.

Setting Up DV and HDV Scene Extraction Before Capturing

To set up DV and HDV Scene Extraction before capturing:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Double-click Capture Settings.

   The Capture Settings dialog box opens.

3. Click the DV&HDV Options tab.
4. Select DV or HDV Scene Extraction, depending on your type of project.
5. Select one of the following options:
   - **Add Locators:** Creates locator marks where the TOD information breaks occur while capturing.
   - **Create Subclips:** Creates subclips where the TOD information breaks occur while capturing.
   - **Both:** Creates subclips and locator marks where the TOD information breaks occur while capturing.
6. Click OK.
7. Select Tools > Capture and then click the Record button.

   When capturing has finished, subclips are created with the same source clip name and the file name extension *.sub.01* where TOD information breaks occurred. Locator marks appear in the master clip where TOD information breaks occurred.

Setting Up DV Scene Extraction After Capturing

You can use DV Scene Extraction with systems that include the DV/MPEG option. DV Scene Extraction after capturing is not available with HDV media.

To set up DV Scene Extraction after capturing:

1. Open a bin.
2. Click the clip for which you want to create subclips or locator marks. Ctrl+click (Windows) or Shift+click (Macintosh) to select multiple clips.
3. Select Bin > DV Scene Extraction.

   The Capture Settings dialog box opens.
4. Click the DV Options tab.
5. Select DV Scene Extraction.
6. Select one of the following options:
   - **Add Locators:** Creates locator marks where the TOD information breaks occur while capturing.
   - **Create Subclips:** Creates subclips where the TOD information breaks occur while capturing.
   - **Both:** Creates subclips and locator marks where the TOD information breaks occur while capturing.
7. If you have chosen to create subclips, select the bin where you want these subclips stored.

To cancel the process, press Ctrl+period (Windows) or Command+period (Macintosh).

8. Click OK.

   In the bin, subclips are created with the same source clip name and the file name extension *.sub.01* where TOD information breaks occurred. Locator marks appear in the master clip where TOD information breaks occurred.

   If you select a DVCPRO, a non-DV, or an audio-only clip, an error message appears, informing you that an incompatible clip was selected. These clips are bypassed during the DV Scene Extraction process.

Support for Panasonic VariCam

The following procedure applies when capturing from tape via the Panasonic AJ-HD1200A camera.

The Panasonic VariCam® is a camera that allows the recording of frames rates between 1fps and 60fps. For example, material captured at 24 frames per second and played back at 24 frames per second will have no speed change, but the same action captured at 48 frames per second and played back at 24 frames per second will result in playback that is slowed down 50% (a 50% slo-mo).

The 720p format is always recording to a progressive 60 (59.94) frame tape format. The different frame rates are achieved by selecting the desired frame rate and the camera flags the “true” frames within the 60 frame sequence. When these flags are detected by the Avid editing system, only those frames are captured and stored to disk. When played back at the project’s frame rate, either a slow motion or fast motion will result.

Note, if you capture audio, it will be out of sync.

To use the VariCam camera with the Avid editing application:

1. Connect the VariCam camera through a 1394 (FireWire) port on your computer.
2. Select a 720p project format.
3. Do one of the following:
   - Click the DNA and 1394 button above the Timeline so that 1394 is displayed.
   - Select Special > Device > IEEE 1394.
4. Either select or deselect the “Preserve VariCam Frames” option in the Capture tool:

   If deselected (the default), the capture will observe the flags in the video stream and only capture those frames. This type of capture will result in a slow motion or fast motion depending on original recording speed.

   If selected, every frame is captured (all 60 frames), essentially ignoring the flagged frames.

Chapter 5

Importing Files: Advanced

When you import files, the system converts them into objects in a bin. You can manipulate and edit these objects as you would any other clip or sequence. Any corresponding media files are stored on a target drive that you specify.

The following topics provide advanced information on how to import files:

- Importing Photoshop Graphics
- Importing Media from XDCAM Devices
- Importing Editcam Files
- Importing Sequences from Pro Tools through Interplay

For basic information about importing, see "Importing Files: Basics" in the Help or the Basics Guide for your Avid editing application.

Importing Photoshop Graphics

You can import both single-layer and multilayered graphics created in Adobe® Photoshop®. If you import multilayered graphics, you can preserve the original layers, and then edit them individually in your Avid editing application.

Your Avid editing application supports graphics created in the following modes: RGB 8-bits/channel, RGB 16-bits/channel, and grayscale, including alpha channels. For more information, see "Import Specifications for Supported Graphics File Formats" on page 738. An alpha channel must be straight; the application does not properly import premultiplied alphas.

Importing Single-Layer Photoshop Graphics

A single-layer graphic is a graphic file that was created on a single layer or a layered graphic that was flattened in Photoshop. Avid editing applications import this kind of graphic as a matte key or master clip, depending on the format of the Photoshop file.

- If the graphic uses a transparent background or an alpha channel, the Avid editing application creates a matte key.
- If the graphic uses a background color, the Avid editing application creates a master clip.

To import a single-layer graphic, or a multilayered graphic that was flattened in Photoshop:

- Follow the standard instructions for importing a graphic, as described in "Importing Files" in the Help.

Single-layer files that contain transparency gradients or feathering and a transparent background do not import correctly. Partially transparent pixels are displayed with either white or black blended into them, based on the percentage of transparency. To avoid this problem, create an additional layer in the original Photoshop file that contains at least one pixel of information, such as a spot drawn with a paintbrush. Then import it as a layered file, as described in "Importing Multilayered Photoshop Files" on page 191. In the message box, click Select Layers and select only the layer that contains the graphic elements; do not select the additional layer.

Importing Multilayered Photoshop Graphics

A multilayered graphic is a graphic file that was created in Photoshop with two or more layers.

When you import a multilayered graphic, you can import each layer as a separate object (a matte key or master clip). You can then manipulate individual layers like any other matte key or master clip. You can also import the graphic as a flattened image, or select the layers to import.

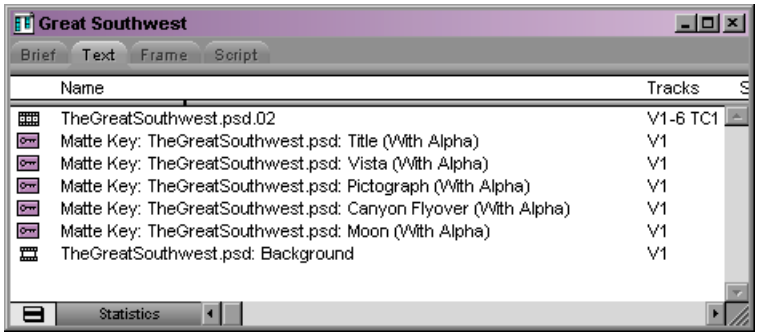
You can import multilayered graphics created in Photoshop v6.0 or later.

Example of Multilayered Photoshop Graphics Import

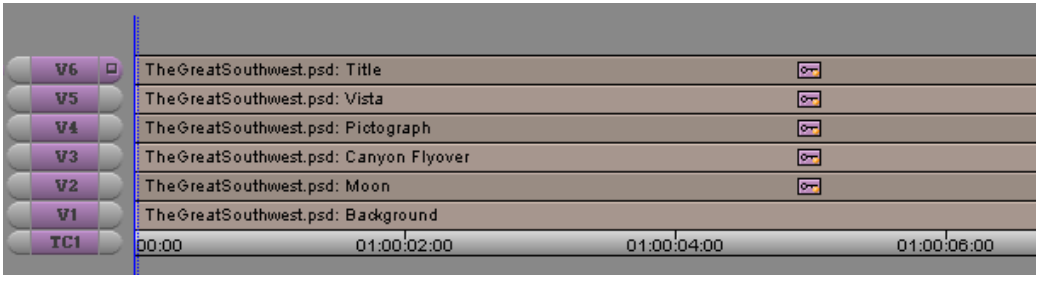
A typical multilayered Photoshop graphic might consist of a collage of still images over a background image, with a layer of text. Each image is on its own layer in the Photoshop file (with the background image on the lowest layer), and the text is also on its own layer. The goal is to edit the collage into a sequence, building it up one image at a time, and then add the text. The following illustration shows the graphics and layers in Photoshop.

Your Avid editing application imports each layer as an individual matte key with alpha channel. In this example, the graphic uses a background image, so the system creates the background image as a master clip. (If the graphic used a transparent background, the background layer would be imported as a matte key.)

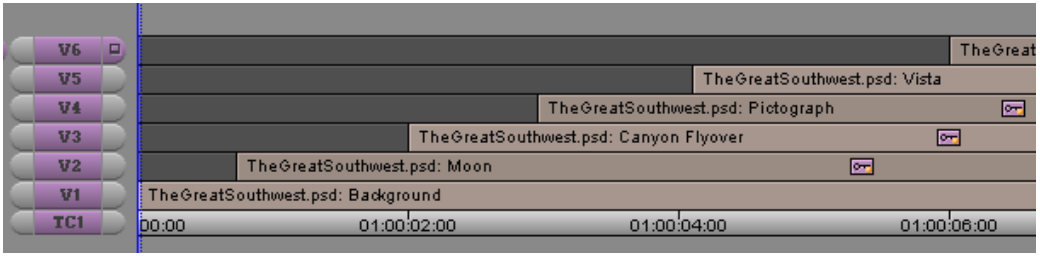
The following illustration shows the layers as they appear in a bin.



During the import, your Avid editing application creates a sequence with each layer on a separate video track; this makes it easy to edit all layers into the final sequence. This sequence preserves the names and order of the layers as created in the original Photoshop file, as shown in the following illustration.



You can then edit the tracks to build up to the full collage.



Support for Multilayered Photoshop Graphics Import

You should be aware of the following requirements for multilayered graphics import and details of how your Avid editing application handles the import:

- Graphics must be RGB 8 or 16 bits, or grayscale.
- Layer order and layer names are preserved during import.
- Hidden layers are imported as matte keys.
- Opacity is converted to Foreground level in the Matte Key effect.
- Text and shape layers are rasterized (converted from vector-based to bitmap) during import.
- Not all layer options and types are supported for import.

  For information on support for layer options and types, see the following tables.

  For information on preserving layer effects during import, see “Preserving Layer Effects in Multilayered Photoshop Graphics” on page 191.

Support for Photoshop Layer Options

Layer Option	Supported	Notes
Blending Mode	No	To preserve the blending mode (Dissolve, Multiply, and so on), merge the layer into another layer that does not use a special blending mode. Only normal mode is supported.
Opacity	Yes	The imported layer's Level is set to the opacity specified in Photoshop. You can adjust opacity levels with the Foreground Level control in the Effect Editor.
Layer Group	Partial	Layer grouping is ignored. All layers, including grouped layers, are imported as individual layers. To preserve a clipping group, merge the grouped layers into the base layer.
Layer Set	Partial	All layers within a set are imported as individual layers.
Layer/Set Mask	No	Layer and set masks are ignored. To preserve a layer mask, apply it to the layer. To preserve a set mask, merge the set into an empty layer. To preserve a special layer's mask, rasterize the layer.
Layer Style	No	Layer styles are ignored. To preserve a layer style, you must convert the style into layers.

Support for Photoshop Special Layer Types

Layer Option	Supported	Notes
Type Layer	Yes	—
Solid Layer	Yes	Solid layers are imported as a graphic with a full-screen opaque alpha channel.
Gradient Layer	Yes	Gradient transparency is preserved.
Pattern Layer	Yes	—
Adjustment Layer	No	Adjustment layers include Levels, Curves, Color Balance, Brightness/Contrast, Hue/Saturation, Channel Mixer, Gradient Map, Invert, Threshold, and Posterize.

Preserving Layer Effects in Multilayered Photoshop Graphics

Some layer options in Photoshop are not supported for import into your Avid editing application. See “Support for Multilayered Photoshop Graphics Import” on page 189. For example, a title with a Drop Shadow and an Outer Glow effect would not keep these effects when imported.

To preserve the effects in these layers, merge them in Photoshop (as described in the Photoshop documentation) and then import the file.

You can also preserve layer effects and the original structure of the file by importing the file in two stages:

1. For the first import, click Select Layers and select all layers *except* the layers that contain layer effects.
2. For the second import, open Photoshop, hide the layers you’ve already imported, and show the layers that contain layer effects. During the import, click Flattened Image. The resulting image contains only the layers that contain layer effects.

Importing Multilayered Photoshop Files

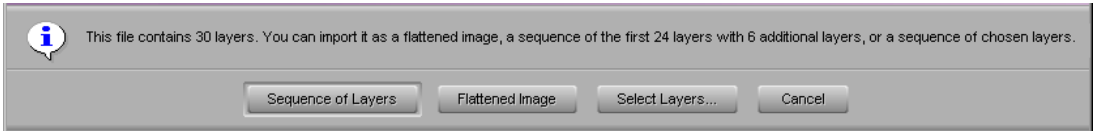
To import a multilayered Photoshop file:

1. Prepare the Photoshop graphic for import.

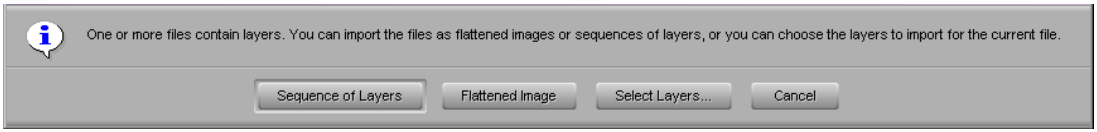
   For more information, see “Support for Multilayered Photoshop Graphics Import” on page 189 and “Preserving Layer Effects in Multilayered Photoshop Graphics” on page 191.
2. Follow the standard instructions for importing a graphic, as described in “Importing Files” in the Help. To create the matte correctly, you need to click the Options button and select Alpha: Invert Existing.
3. After you select one or more files and click Open, a message box opens.
   - If you select a single file, and the number of layers does not exceed the number of tracks supported by your Avid application, the following message box opens.

This file contains layers. You can import it as a flattened image, a sequence of layers, or a sequence of chosen layers.
Sequence of Layers
Flattened Image
Select Layers...
Cancel

- If you select a single file, and the number of layers exceeds the number of tracks supported, the following message box opens.


This file contains 30 layers. You can import it as a flattened image, a sequence of the first 24 layers with 6 additional layers, or a sequence of chosen layers.
Sequence of Layers
Flattened Image
Select Layers...
Cancel

- If you select multiple files, the following message box opens.


One or more files contain layers. You can import the files as flattened images or sequences of layers, or you can choose the layers to import for the current file.
Sequence of Layers
Flattened Image
Select Layers...
Cancel

4. In the message box, do one of the following:
   - Click Sequence of Layers if you want to preserve all layers. If the number of layers exceeds the number of tracks supported, your Avid editing application creates a sequence that contains the number of tracks supported. Additional layers are imported into the bin, but not as tracks in a sequence. This selection applies to all files you selected for import.
   - Click Flattened Image if you want to import the graphic as a single matte key or clip. Your Avid editing application flattens the file by combining the layers. This selection applies to all files you selected for import.

Hidden layers are not combined in the flattened image. Make sure all layers you want in the final image are visible. In addition, layers with partial transparency do not display properly in the flattened, imported image. See "Importing Single-Layer Photoshop Graphics" on page 186.

   - Click Select Layers if you want to select which layers to preserve.

     The Select Layers dialog box opens. Select the layers you want to import and click OK. If you select more than 24 layers, the additional layers will be imported but will not be included in the sequence.

Your Avid editing application displays messages as it creates media for each layer. At the end of the process, the objects are displayed in the bin you selected.

Importing Media from XDCAM Devices

Sony's XDCAM™ decks and camcorders use an optical disc with a capacity of up to 23.3 GB to store recorded media. The XDCAM devices can record media in high-resolution MPEG IMX™, DVCAM™, and XDCAM HD formats. At the same time, XDCAM devices create corresponding low-resolution proxy media (MPEG-4). This allows you to work with the proxy media in an off-line editing session and then later conform the proxy media to the corresponding high-resolution media.

The following table lists the formats and resolutions available when you work with XDCAM media:

XDCAM Resolutions

Format/Resolution	Number of Audio Channels (maximum)
XDCAM HD (1080i/59.94, 1080i/50, 1080p/23.976): XDCAM HD 17.5 Mbits XDCAM HD 25 Mbits XDCAM HD 35 Mbits HDV 1080i (25 Mbits CBR)	8
DVCAM: DV 25 411 (NTSC and PAL) DV 25 420 (PAL)	4
MPEG IMX: (NTSC and PAL) MPEG 30 MPEG 40 MPEG 50	8
MPEG-4 (proxy media)	4 or 8

Working with XDCAM media entails the following general steps:

1. Connecting the XDCAM device to your system and configuring your settings.
2. Importing the proxy media.
3. Editing the proxy media.
4. Using the Import function or the Batch Import function to import DVCAM or MPEG IMX media, and then conforming the proxy media with the high-resolution media.
5. Editing and finishing the sequence.

Connecting the XDCAM Device

You use an IEEE-compliant 1394 (i.LINK) port on your computer to connect the XDCAM device to your system. The XDCAM interface is configured to use the SBP2 protocol so you can access the XDCAM device as a disk volume on your system.

The 1394 port on your computer must be on a bus separate from the one used by the Avid DNA hardware.

You can have multiple XDCAM devices connected to your system at any one time. Each device appears as a separate optical drive, similar to a CD-ROM or DVD-ROM drive. The drive's volume label carries an XDCAM identifier — for example, `XDCAM (E:)`.

To use the XDCAM device with your Avid editing application, you need to install the appropriate device driver included with the Sony XDCAM deck or camera. For more information on connecting and configuring your XDCAM device, see the documentation that came with your Sony product.

Working with XDCAM HD Media

Your Avid editing application supports import of both proxy and high-resolution XDCAM HD media.

XDCAM HD media, like other XDCAM media, is imported at the data rate at which it was recorded in one of the following resolutions:

- XDCAM HD HQ (17.5 mb/sec)
- XDCAM HD HQ (25 mb/sec)
- XDCAM HD HQ (35 mb/sec)

However, when you create new media (create a title, render effects, transcode, and so on), you need to select a different resolution. The choice of resolutions is based on the project format. For example, in a 1080i/59.94 project, your can create media as DNxHD 220x, DNxHD 220, or DNxHD 145.

You can play XDCAM HD media to a Client monitor or output a digital cut as Best Performance (yellow/yellow) or Draft Quality (yellow/green). However, to play or output as Full Quality (green/green), you must transcode the XDCAM HD media to a DNxHD resolution or another compatible resolution.

Playing XDCAM Media on an Avid Symphony

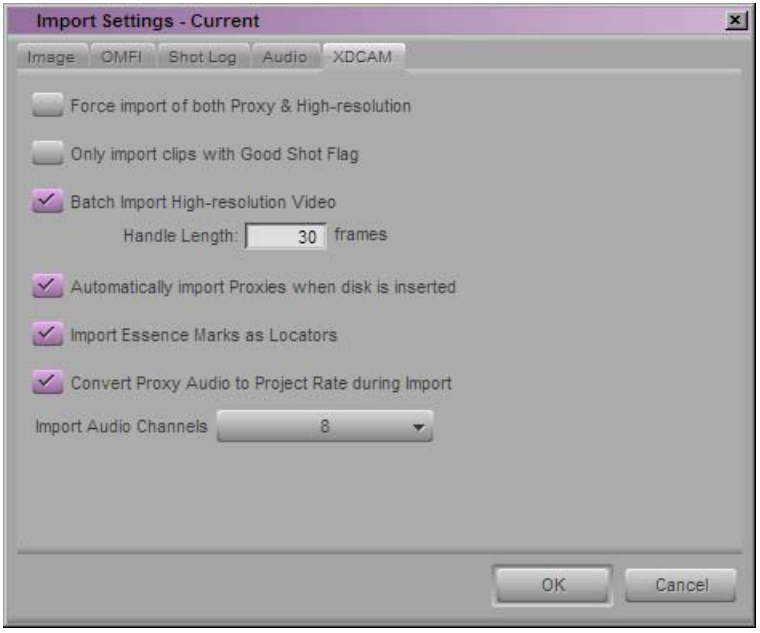
Due to the design of the Nitris hardware, playback of XDCAM media on an Avid Symphony Nitris editor causes dropped frames. To allow for full performance playback, you should transcode the XDCAM media into DNxHD media to play the video on your Avid Symphony system. Use the following workflow to play XDCAM media on your Symphony editor.

To play XDCAM media on an Avid Symphony system:

1. Import your XDCAM media as described in "Exporting Media to XDCAM Devices" in the Help.
2. Transcode the XDCAM media into DNxHD media by selecting DNxHD from the Target Video Resolution menu. See "Using the Transcode Command" in the Help for specific steps.
3. Edit your media.
4. Perform your output as you normally would. If you want to transfer the media back to XDCAM, follow the instructions in "Exporting to XDCAM" in the Help and select the appropriate XDCAM video format.

Setting the XDCAM Import Options

You set the default options for importing XDCAM media in the XDCAM tab of the Import Settings dialog box.



You can use these settings to override the selections made in the Select Files to Import dialog box or to set default behavior for importing XDCAM media. For more information on Import Settings, see “Import Settings: XDCAM Tab” in the Help. You can also view this information by clicking the dialog box and pressing the F1 key.

Importing XDCAM Media

XDCAM devices store media as MXF OP1a interleaved files. The Avid editing application, does not use these files directly; instead, you must first import the media. The import process creates new video and audio MXF media files consisting of one video track and up to eight audio tracks.

Low-resolution proxy media have the same number of audio tracks as the high-resolution formats.

There are several ways to import XDCAM media:

- You can automatically import all proxy media when you load a disc in your XDCAM device. See “Automatically Importing Proxy Media” on page 198.
- You can manually import all proxy media on all discs currently loaded on your system. See “Importing All Proxy Media from an XDCAM Disc” on page 199.
- You can copy the proxy media files to a separate location (for example, to a folder copied on an FTP site), transfer them to a local drive or removable disc (for example, a CD-ROM), and import the proxy media without directly accessing the XDCAM device. See “Copying XDCAM Proxy Media to a Local Drive or a Server” on page 200.
- You can import proxy media, high-resolution media, or both using the Import function. See “Manually Importing XDCAM Media from the XDCAM Disc” on page 201.

For some workflows, you might want to import the proxy media first so you can start editing. Once you create your sequence, you can use the batch import function to import only those portions of the high-resolution clips needed for your sequence.

For other workflows, you might want to import the proxy media to an editing workstation, and then separately import the high-resolution media either to another workstation or to an Avid Unity server using Avid Interplay Transfer. Your Avid editing application maintains the connection between the proxy media and the high-resolution media, so you can relink the edited clips at any time to the high-resolution master clips in a shared storage environment.

When you relink proxy media to high-resolution media, do not select Specific Resolution as the Relink Method option. Instead, select either Highest Quality or Most Compressed.

The import process for XDCAM media differs from the standard import in that you can import XDCAM media only at the native resolution of the XDCAM media (for information on XDCAM resolutions, see “Importing Media from XDCAM Devices” on page 193).

Audio for high-resolution XDCAM media is imported at a sample rate of 48 kHz. If the sample rate for your project is different (for example, 44.1 kHz), you need to change the sample rate for the XDCAM audio before you can monitor it in the Timeline or export the media as a sequence. For information on changing the sample rate, see “Changing the Sample Rate” in the Help.

XDCAM cameras record proxy audio at a sample rate of 8 kHz. When you import proxy media, you can choose to change (upconvert) the sample rate to your project rate. This might slow the import process a bit, but it greatly improves playback of audio tracks.

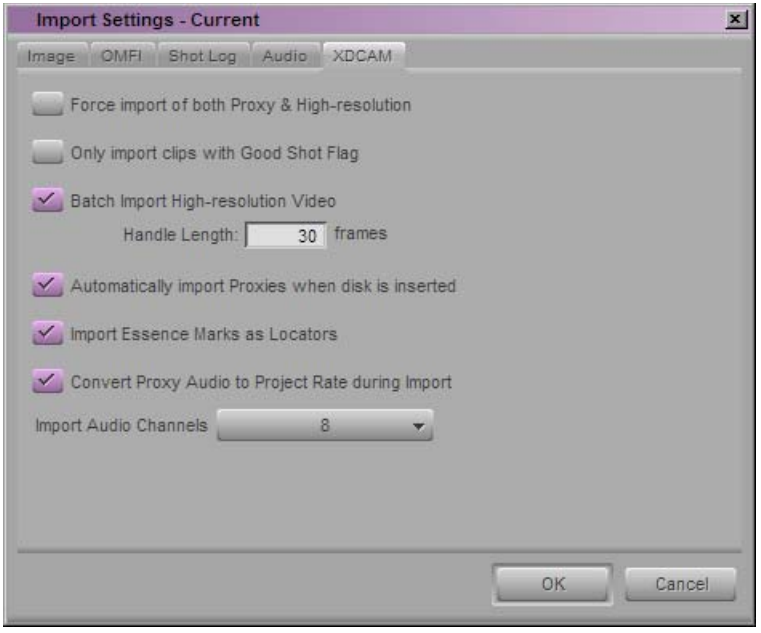
Automatically Importing Proxy Media

You can use this method to automate the process of importing proxy media from your XDCAM device to your Avid editing application.

To import proxy media from an XDCAM device:

1. Double-click Import in the Settings list.

   The Import Settings dialog box opens.

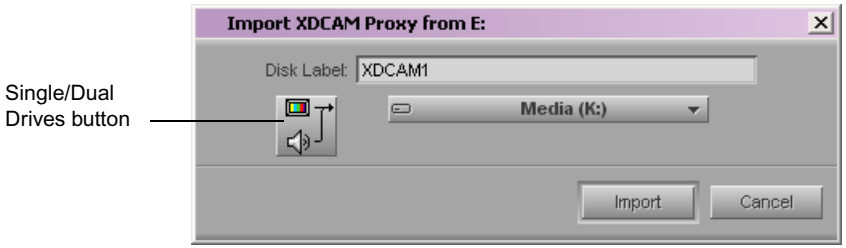


2. Click the XDCAM tab.
3. Select Automatically Import Proxies when disk is inserted.
4. Click OK.
5. Open the bin in which you want to store the imported files.

If you do not select a bin, or if you have more than one bin open, a dialog box opens and directs you to select from a list of open bins or to create a new bin.

6. Insert a disc into your XDCAM device.

   The Import XDCAM Proxy from *drive*: dialog box opens.



7. Type a name in the Disk Label text box.

Your Avid editing application uses the disk label for operations such as Batch Import, where you are prompted to insert a specific XDCAM disc that holds the files you want to import. A disk label is required in order to import XDCAM media.

8. Click the Single/Dual Drives button, and select a destination drive for the imported file from the menu.
9. Click Import.

   When your application finishes importing the files, the clips appear in the selected bin.

Your Avid editing application imports XDCAM media at the native resolution of the media on the XDCAM disc. Your application ignores other resolution settings — for example, in the Select Files to Import dialog box.

You can repeat this procedure for each XDCAM disc that holds media you want to import.

Importing All Proxy Media from an XDCAM Disc

You can use this method when you want to import all of the proxy media stored on your disc, but you have not opted to import the proxy media automatically. If you want to import only some of the files on your disc, use the procedure described in "Manually Importing XDCAM Media from the XDCAM Disc" on page 201.

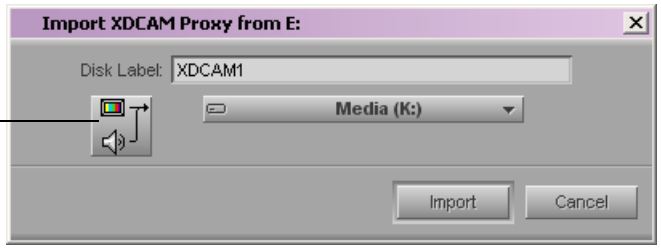
For information on setting the XDCAM import to start automatically, see "Automatically Importing Proxy Media" on page 198.

To import all proxy media from a disc:

1. Open the bin in which you want to store the imported files, and select it to make it the active bin.
2. Insert a disc into your XDCAM device.

3. Select File > Import XDCAM Proxy.

   The Import XDCAM Proxy from *drive*: dialog box opens.



4. Type a name in the Disk Label text box.

Your Avid editing application uses the disk label for operations such as Batch Import, where you are prompted to insert a specific XDCAM disc that holds the files you want to import. A disk label is required in order to import XDCAM media.

5. Click the Single/Dual Drives button, and select a destination drive for the imported file from the menu.
6. Click Import.

   When your application finishes importing the files, the clips appear in the selected bin.

Your Avid editing application imports XDCAM media at the native resolution of the media on the XDCAM disc. Your application ignores other resolution settings — for example, in the Select Files to Import dialog box.

You can repeat this procedure for each XDCAM disc that holds media you want to import.

Copying XDCAM Proxy Media to a Local Drive or a Server

You might want to import proxy media when the XDCAM device is not available. For example, if you want an editor to start editing the XDCAM footage while the actual XDCAM disc is at another location, you can transfer the proxy media files to an FTP server. The files then can be downloaded from the server, and an editor can import the proxy media and begin editing. Later, you can relink the proxy media to the high-resolution media, or use the batch import function to import the high-resolution media for final editing and finishing.

When you copy the XDCAM media files from the XDCAM device to another system or to a removable drive, you need to copy only the Sub folder (for proxy media) or the Clip folder (for high-resolution media).

A possible workflow for importing XDCAM proxy media from a non-XDCAM drive uses the following steps:

1. Copy the proxy folder (Sub) from an XDCAM device to an FTP server.
2. Download the files to a local drive.
3. Import the proxy media to an Avid editing application from a local drive just as you would from an XDCAM disc, and then begin editing. See "Manually Importing XDCAM Media from the XDCAM Disc" on page 201.
4. When the XDCAM disc is available, either import or batch import the high-resolution media to finish editing. See "Importing Files" in the Help or "Batch Importing High-Resolution Media" on page 205.

Manually Importing XDCAM Media from the XDCAM Disc

You can use the standard Import function to import XDCAM media into your Avid application. You set the default XDCAM import options in the XDCAM tab of the Import Settings dialog box. For more information on import options, see "Import Settings: XDCAM Tab" in the Help.

You can import files by doing one of the following:

- Using the Import function
- Using the drag and drop method of importing files

  For more information, see "Importing Files" in the Help and "Using the Drag-and-Drop Method to Import Files" in the Help)

Your Avid editing application imports XDCAM media at the native resolution of the media on the XDCAM disc. Your application ignores other resolution settings — for example, in the Select Files to Import dialog box.

The MXF media files are located in the following directories on your XDCAM disc:

- High-resolution media — *XDCAM drive*:\Clip
- Proxy media — *XDCAM drive*:\Sub

Importing Essence Marks as Locators

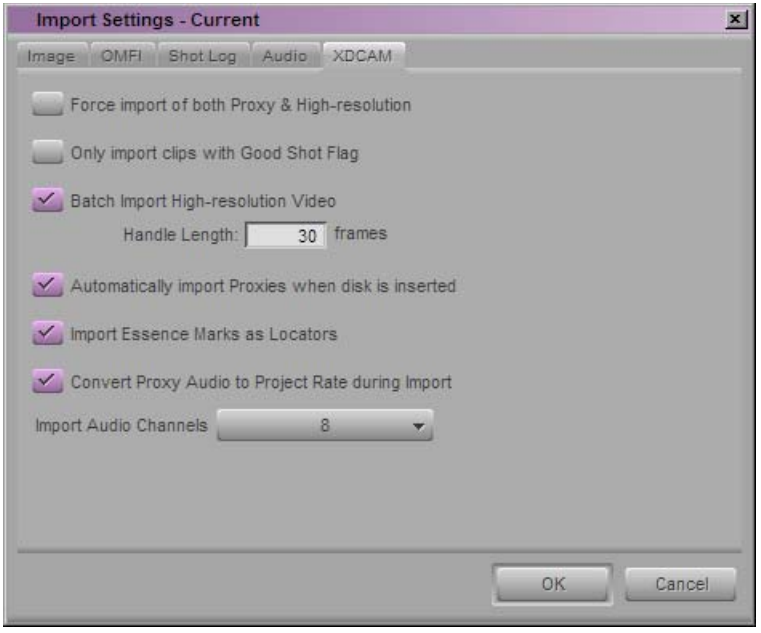
Sony XDCAM products use Essence Marks to store metadata about media clips. Essence Marks, which can be set manually or automatically, allow XDCAM cameras to mark events such as clip start points or audio clipping. You can use Essence Marks for sorting and searching clips stored on XDCAM discs. For a description of Essence Marks, see your Sony documentation.

You can import Essence Marks as locators when you import either proxy media or high-resolution media. The locators appear in the master clips created by importing XDCAM media, and you can view them in the Source/Record monitor, in the Timeline, and in the Locators window. For information on using locator information as you edit, see "Using Locators" on page 331.

To import Essence Marks as locators:

1. Double-click Import in the Settings list.

   The Import Settings dialog box opens.



2. Click the XDCAM tab.
3. Select Import Essence Marks as locators.
4. Click OK.

Editing the Proxy Media

When you import the proxy media files to a bin, new master clips are created that you can edit in the Timeline just like any other clip. You can mix the clips in the Timeline with any supported NTSC or PAL resolutions, add effects or titles, or perform any other editing function available in your Avid editing application.

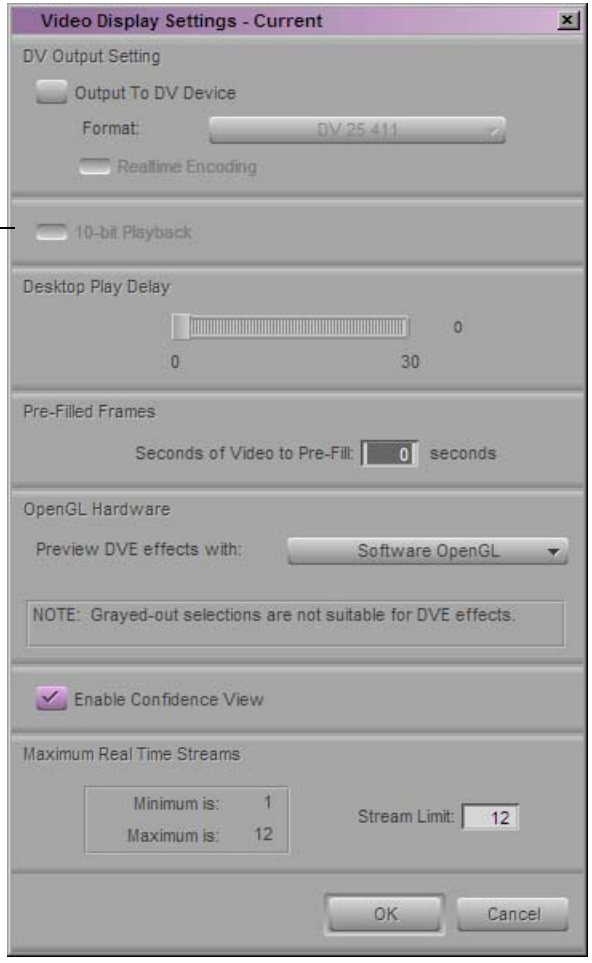
XDCAM proxy media is single-field resolution media. For the best performance during playback, select Draft Quality or Best Performance from the Video Quality Menu in the Timeline. For more information, see “Optimizing Your Playback Performance” in the Help.

You can improve playback further by using 8-bit processing for your video display. See “Video Display Settings” on page 722.

To set the playback options for XDCAM media:

1. Right-click (Windows) or Ctrl+Shift+click (Macintosh) the Video Quality menu button, and select Draft Quality (yellow/green) or Best Performance (yellow/yellow).
2. Right-click (Windows) or Ctrl+Shift+click (Macintosh) the Video Quality menu button, and select Video Display Settings.

The Video Display Settings dialog box opens.



10-bit Playback

3. Deselect 10-bit Playback.
4. Click OK.

Some effects, such as IllusionFX and FluidMotion effects, do not play back in real time when you have Draft Quality selected. For these effects, you must also select the Progressive Source button in the Effect Editor before rendering.

You can also perform emergency play-to-air operations of the proxy media as a normal export, as a Send to Playback operation, or as a digital cut.

Batch Importing High-Resolution Media

Once you finish editing your sequence using proxy media, you can replace the low-resolution media in the sequence with the corresponding high-resolution media by using the Batch Import command. The Batch Import command allows you to reimport the high-resolution DVCAM, MPEG IMX, or XDCAM HD files while automatically linking the new imported material with the sequences and master clips created with the low-resolution MPEG-4 media. If you are batch importing media for an edited sequence, the import operation copies only those portions of the high-resolution master clip needed by the sequence, not the whole clip. If you are batch importing master clips, the import process copies entire clips.

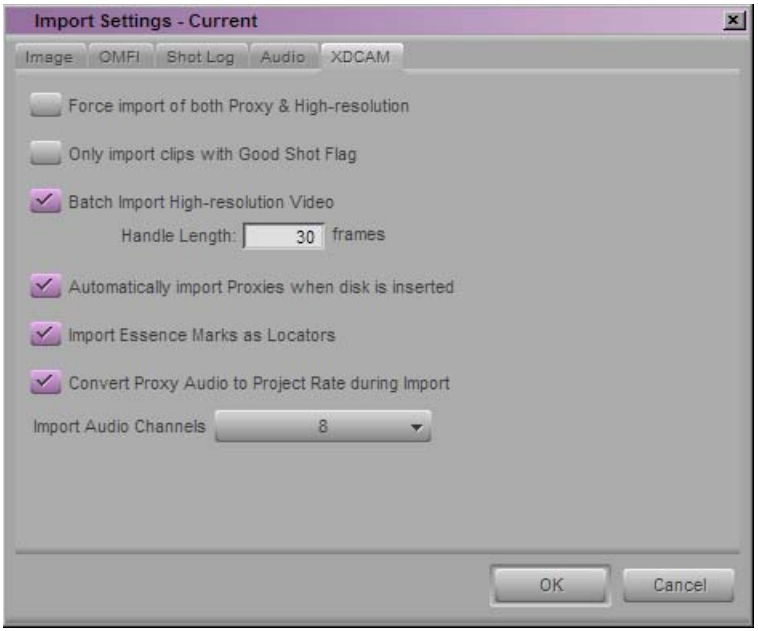
The Disk Label column in the bin headings displays the XDCAM disk labels created when you imported the XDCAM media. For information on displaying bin columns, see "Bin Column Headings" on page 237. If necessary, you can use the Modify command to change the name in the Disk Label column.

You can also import the high-resolution media files separately. Since importing high-resolution master clips requires more storage, time, and bandwidth than batch importing only the necessary parts of clips, you might want to import the master clips to another workstation or to another system in a shared storage environment — for example, to an Avid Unity server. Once the high-resolution media is imported, you can use the Relink command to move between the proxy media and the high-resolution media. For more information about relinking media, see "Editing and Finishing High-Resolution Media" on page 208 and "Relinking Media Files" on page 269.

To batch import high-resolution XDCAM media:

1. Double-click Import in the Settings list.

   The Import Settings dialog box opens.



2. Click the XDCAM tab.
3. Select Batch Import High-resolution Video.
4. Click the Handle Length text box and type the number of additional frames you want to import at the heads and tails of the new master clips.

   This provides enough overlap for trimming and adding transition effects. The default is 30 frames.
5. Click OK.
6. Open the bin, and select the sequences or master clips created with proxy media that you want to replace with high-resolution media.
7. Insert a disc into your XDCAM device.

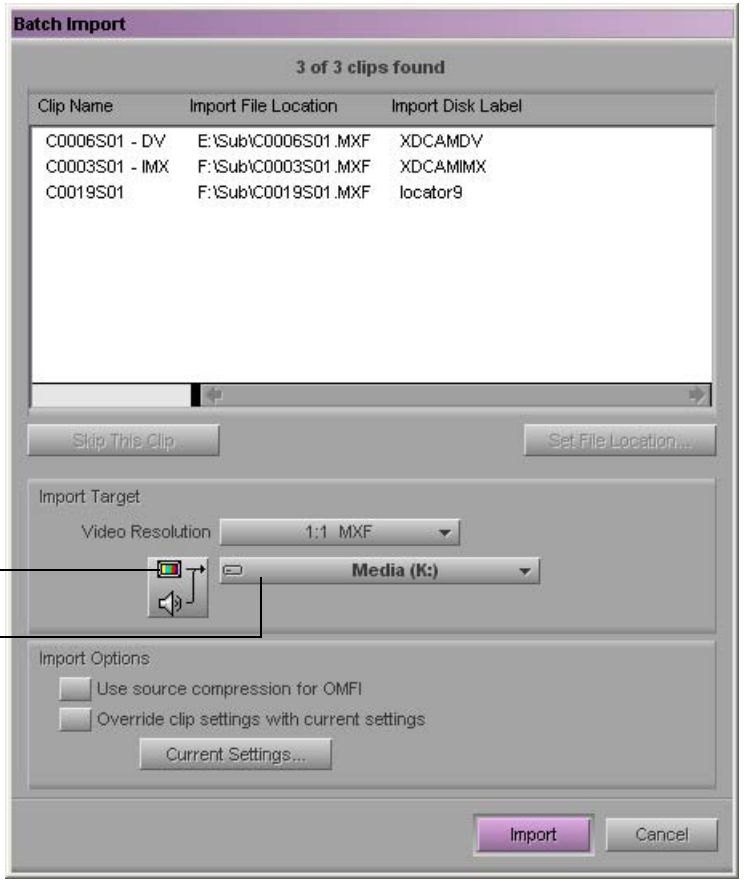
If your source media is stored on multiple XDCAM discs, and you have multiple XDCAM devices, you can insert all the discs at the same time.

8. Select Clip > Batch Import.

   A message box opens.

9. Click the All Clips button.

   The Batch Import dialog box opens.



Your Avid editing application imports XDCAM media using the native resolution of the XDCAM files.

10. Click the Video Drive and Audio Drive menus, and select a destination drive or drives for all the media files.

    You can separate video and audio onto different drives.

11. Click Import.

    The high-resolution files are imported. If the source media is stored on more than one disc and not all discs are currently attached to your system, the system prompts you to insert additional discs as needed.

Editing and Finishing High-Resolution Media

Once you have imported the high-resolution media, you can play back and edit your sequence with full resolution and in real time using the standard Avid editing functions. You can also send the sequence to a broadcast playback server using Avid Interplay Transfer.

As you edit your sequence, you can move between the proxy media and the high-resolution media by relinking your clips with the corresponding media files. When you relink proxy media to the high-resolution media, select one of the following Relink Method options:

- Highest Quality
- Most Compressed

Do not select Specific Resolution as the Relink Method.

This allows the audio tracks to relink to the appropriate audio files. For more information about the Relink command, see "Relinking Media Files" on page 269.

Importing Editcam Files

You can import clips recorded with Ikegami® disk-based Editcam™ or Editcam-station products. The Editcam is a digital news-gathering (DNG) camera that uses Avid's CamCutter® technology.

To import Editcam files:

1. (Option) Select File > Mount All.

   Performing this step in all cases is good practice, but is not necessary if you performed it previously or if you inserted the FieldPak® before starting your Avid editing application.

2. Open a bin.
3. Select File > Import.

   A dialog box opens.

4. , Click the Files of Type menu (Windows) or the Show menu (Macintosh), select CamCutter, and then select the CamCutter bin by doing the following:

   a. From the desktop, select the FieldPak by selecting the FieldPak drive letter (Windows) or FieldPak volume name (Macintosh).

   b. Open the bin folder on the FieldPak.

   c. Select the CamCutter bins or select the .spl files to be imported.

The Outakes.bin contains clips that were discarded by the Editcam operator. These clips are generally not imported.

5. Ignore the field specifying video resolution to be imported.
6. Ignore the field regarding video and audio drive selection.
7. Proceed with the import operation.

   A dialog box opens, asking you to identify the drives that contain the media files.
8. Select the FieldPak drive letters (Windows) or volume names (Macintosh) as appropriate.

If the drive or volume is not listed, go back to step 1 and follow the procedure again.

9. Complete the import process.

Your Avid editing application creates entries in the selected bin that reference the clips on the FieldPak.

For more information on importing files, see “Importing Files: Basics” in the Help.

Note the following restrictions:

- The CamCutter clips are not copied onto a media drive. Your Avid editing application’s bin references the clips physically located on the FieldPak. If you remove the FieldPak, the referenced clips appear as Media Offline.
- The FieldPak has limited performance and is used only to record and play back clips. If multiple streams of video are required to perform advanced effects, it is possible that the data cannot be supplied fast enough for proper operation. If this situation occurs, you can do one of the following:
  - Render the effects, see “Rendering Effects” in the Help.
  - Consolidate the sequence to a valid media drive, see “Consolidating Media” in the Help.
  - Import the CamCutter clips as OMFI files. This effectively copies the clips to a media drive. See “Import Settings” on page 693.

For additional information regarding Editcam, CamCutter technology, and how these systems operate with nonlinear editors, see the Web site www.nltek.com.

Importing Sequences from Pro Tools through Interplay

You can import a sequence you have worked on in Pro Tools back into your Avid editing application. You need to have checked the sequence into Interplay from Pro Tools.

To import a sequence from Pro Tools:

1. Open the Interplay Window and navigate to the location of the checked-in sequence.
2. Click the sequence and drag it into your bin.

   The editing application checks out the sequence and imports the sequence and the related files into the bin. For more information, see “Using Pro Tools and Interplay” in *Avid Interplay Best Practices*.

Chapter 6
Working with Bins: Advanced

Your Avid editing application provides powerful database tools for organizing and managing your captured material. You can view bins in four different display views. You can rename, sort, sift, duplicate, and delete clips and sequences. You can also print single-clip frames or whole bins.

The following topics provide advanced information on working with bins:

- Advanced Bin Procedures
- Using Text View: Advanced
- Working with Restricted Material
- Printing Bins
- Preparing Digital Bars and Tone
- Importing Color Bars and Other Test Patterns
- Creating Leader

For basic information about bins, see “Working with Bins: Basics” in the Help or the Basics Guide for your Avid editing application.

Advanced Bin Procedures

You can use several advanced procedures in any of the bin display views for manipulating clips in the bin. They include using audio timecode, setting the bin display, displaying custom bin views, assigning colors, and sifting clips and sequences.

- Selecting Sources Used by an Object

Film Scene Workflow

During the organizing phase, common practice on film productions is to organize the captured clips according to scene. This helps to simplify the work environment for the editor and keeps crowded bins to a minimum.

Organize scene bins according to the following basic workflow:

1. Create one bin for each scene by using the procedures described in “Creating a New Bin” in the Help.
2. Gather clips according to scene using one of the following optional procedures:
   - Copy clips for each scene from the capture bins into the appropriate scene bin, using procedures described in “Copying Clips and Sequences” in the Help.
   - Duplicate the clips and then move the duplicates into the appropriate scene bin, using procedures described in “Duplicating Clips and Sequences” in the Help.
3. Proceed to sort, sift, and organize the clips within each scene bin, according to the editor’s preferences.

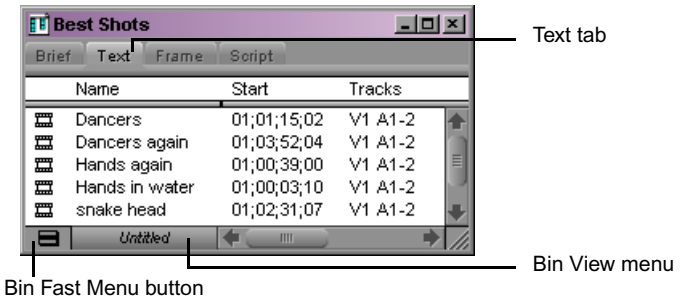
It is good practice to copy or duplicate clips as you reorganize them in bins. As a result, the original source clips will remain in the appropriate dailies bin if you ever need to recapture according to source tape.

Displaying Custom Bin Views

When a bin is in Text view, the Bin View menu appears to the right of the Fast Menu button. Use the Bin View menu (Text view only) to select different bin views. Bins have three default views that are automatically installed:

- **Custom view:** Allows you to create and save customized views. The only required column heading is the Name heading, which is displayed by default. You can customize the view by adding, hiding, or rearranging column headings.
- **Film view:** Has film-related column headings, including key number, ink number, pullin, and so on. If you are working on a non-film-related project and select the Film view, only the non-film-related columns is displayed.

- **Statistics view:** Uses the standard statistical column headings derived from information established during capture, such as start and end timecodes, duration, resolution, and so on.



If you import a log file from your telecine transfer, most of this information is placed in the bin when you import the log. If you do not have a film log, you can enter this information manually by highlighting the field in the bin and typing the information.

For more information on bin column headings, see "Bin Column Headings" on page 239.

Customizing Bin Views in Text View

You can create and save customized bin views that you can easily access from the Bin View menu. You can customize the bin view by resizing the Bin window and adding, hiding, or rearranging bin columns. The only required column heading is Name, and it is displayed by default.

There are several ways to customize views of the bin:

- Alter the arrangement of existing columns in the standard Statistics view or Film view to suit your needs, without adding or hiding columns. These arrangements are recalled each time you select Statistics view or Film view.
- Add or hide columns of information to create customized Statistics or Film views. They are saved as additional view settings in numerical order: for example, *Statistics.1*, *Statistics.2*, and so on, unless you select another name.

To customize views of the bin, you can add, hide, copy, or rearrange standard or customized columns in any combination to create your own custom views. You can name and save them to suit your needs. See "Saving a Custom Bin View" on page 214.

When you create a new bin view, the system saves the settings for this view so that you can later access and alter, copy, or delete these settings. New bin view settings appear in the Settings list in the Project window.

Saving a Custom Bin View

Any time you add, hide, or delete a column, the bin view name changes to an italic name with the file name extension *.n* to indicate that it no longer matches the original view. If you select a new bin view setting while the current setting is untitled or italic, the system discards the current setting.

If you do not save the view after adding or deleting headings, it is discarded.

To save a bin view:

1. Open a bin and click the Text tab.
2. Add or hide columns according to preference.

   The bin view name becomes italic.

   For information on adding, hiding, and deleting bin columns, see "Using Text View: Advanced" on page 223.
3. Click the Bin View menu, and select Save as.

   The View Name dialog box opens.
4. Type a name for the custom view, and click OK.

To change a custom bin view with the Bin View dialog box:

1. Click the Settings tab in the Project window.

   The Settings list appears.
2. Double-click the custom bin view you want to change.

   The Bin View dialog box opens.
3. Select and deselect the columns you want to see.
4. Click OK.

Assigning Colors to Bin Objects

You can assign colors to clips, subclips, sequences, and effect clips to help you manage and organize the bin objects. Colors assigned to bin objects are referred to as source colors. You can display source colors in bins and in the Timeline. For information on displaying source colors in the Timeline, see "Displaying Local and Source Colors in the Timeline" on page 364.

Clip colors assigned to sequences, groups, motion effects, and title clips do not appear in the Timeline.

To add a Color column to a bin:

1. With a bin in Text view, select Bin > Headings.

   The Bin Column Selection dialog box opens.

2. Click (Windows) or click (Macintosh) Color in the list.

3. Click OK.

   The Color column appears in the bin. By default, a new column appears as the last column in the bin. To move the Color column, select the Color column heading and drag it to the left.

To assign a color to a clip, subclip, sequence, or effect clip in a bin:

1. With a bin in Brief or Text view, select the bin objects to which you want to assign a color.

2. Do one of the following:

   - Select Edit > Set Clip Color > *color*.
   - Select Edit > Set Clip Color > Pick, and then select a color from the Windows Color dialog box or the Macintosh Colors panel.

After you assign a custom color, the color appears as Other in the Set Clip Color submenu.

   - (Text view only) Click in the Color column and select a color from the menu.
   - (Text view only) Alt+click (Windows) or Option+click (Macintosh) in the Color column in the bin, and then select one of the colors.

   When you Alt+click or Option+click in the Color column, the menu of colors that appears is limited to the colors you are currently using in the bin.The color appears in the Color column (Text view only) and on the clip icon.

Sifting Clips and Sequences

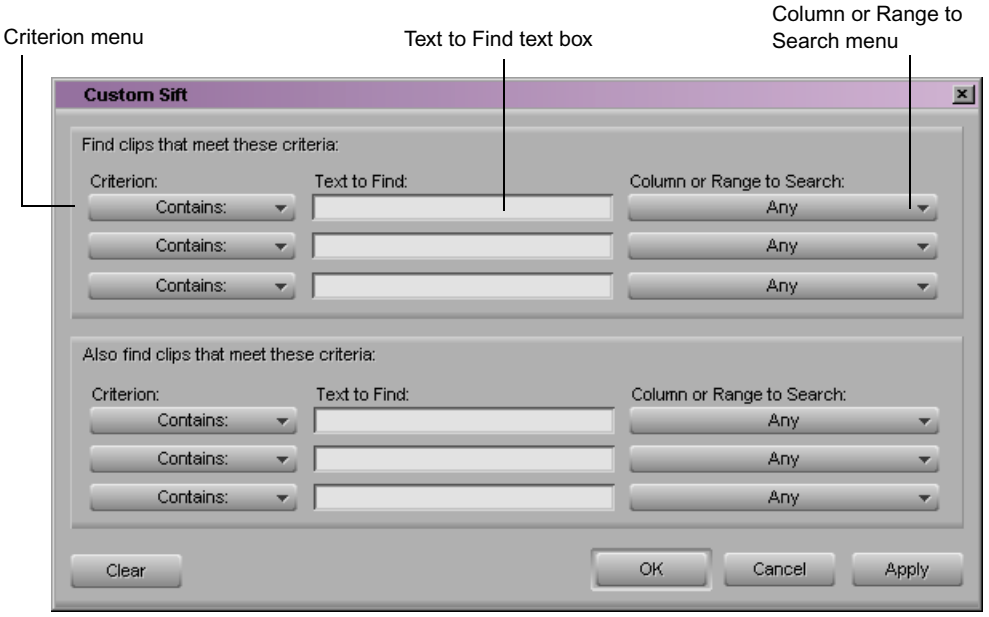
When you sift clips and sequences, the bin displays only those clips and sequences that meet a specific set of criteria. For example, you can do a custom sift to display only those clips containing the word “close-up” in the heading column. The Custom Sift dialog box provides six levels of criteria.

You can also sift on a timecode (or keycode) number within a specific range. For more information, see “Sifting Timecodes or Keycode Ranges” on page 217.

To sift clips or sequences:

1. Select Bin > Custom Sift.

   The Custom Sift dialog box opens.



2. Click the Criterion menu, and select one of the sifting options.
3. Click the first Text to Find text box, and type the text that you want to use as a sift criterion. When sifting by color, type the *exact* name of the color (using uppercase and lowercase letters) in the text box.
4. Click the Column or Range to Search menu, and select a column heading to which you want to apply the criterion.
5. Type additional sift criteria, and make additional column selections as necessary.
6. Click OK.

   Only the clips or sequences that meet your criteria remain in the bin, with the word "sifted" added to the bin name.

After you have sifted the clips in a bin, you can display the bin in a sifted or an unsifted state.

To view the entire bin:

- Select Bin > Show Unsifted.

To view the sifted bin:

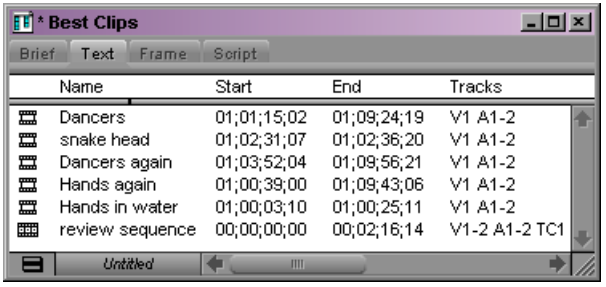
- Select Bin > Show Sifted.

The word “sifted” appears in parentheses after the bin name when you view the bin in its sifted state.

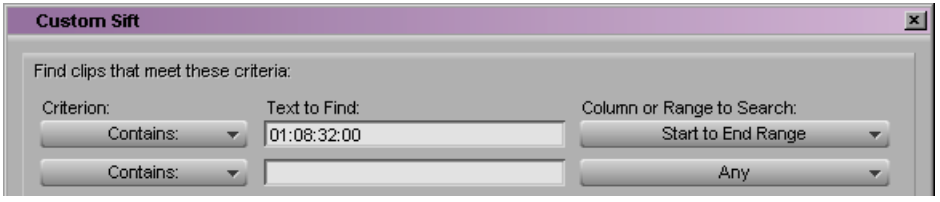
Sifting Timecodes or Keycode Ranges

You can sift on a timecode (or keycode) number within a specific range. For example, you can sift for all the clips that start before and end after a particular timecode.

Before custom sift

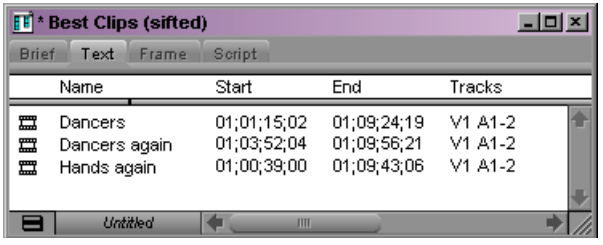


For example, type **`01:08:32:00`** in the Text to Find text box in the Custom Sift dialog box, click the Column or Range to Search menu, and select Start to End Range.



After custom sift

The clips that encompass the timecode number 01:08:32:00



Some column pairs explicitly define a range, for example, Start and End or Mark IN and Mark OUT. Other columns define the beginning of a range, and the end of the range is determined by the Duration column. For example, Auxiliary TC1 implies a range that begins at the value in the Auxiliary TC1 column and ends at that value plus the value in the Duration column.

If you display any column in the bin that is associated with ranges, either explicit or implicit, the corresponding range menu item appears in the Column or Range to Search menu in the Custom Sift dialog box. For example, if you choose to display the Start column and the Auxiliary TC1 column in the bin, the Start to End Range and Auxiliary TC1 Range menu choices will appear in the Column or Range to Search menu.

When specifying a timecode or keycode number, you do not need to enter colons or semicolons, and you can omit the leading zero. For example, you can type **3172000** as a timecode number.

Keycodes contain letters, numbers, and a dash before the feet and frames; for example, KJ23 6892-0345+13. When sifting on a keycode number, you have to enter only the numbers after the dash (the actual counter portion). Any information before the dash is ignored. If you do enter characters before the dash, they must match the corresponding characters in the bin column exactly.

The following table lists all columns associated with explicit ranges and their corresponding menu choices.

Range Menu Items for Explicit Ranges

Bin Column (Explicit Ranges)	Column or Range to Search Menu Item
Start, End	Start to End Range
Mark In, Mark Out	Mark In to Out Range
KN Start, KN End	KN Start to End Range
KN Mark In, KN Mark Out	KN Mark In to Out Range

The following table lists all columns associated with implicit ranges and their corresponding menu choices. The Duration column determines the end of these ranges.

Range Menu Items for Implicit Ranges

Bin Column (Implicit Ranges)	Column or Range to Search Menu Item
Film TC	Film TC Range
Sound TC	Sound TC Range
Auxiliary TC1	Auxiliary TC1 Range
Auxiliary TC2	Auxiliary TC2 Range
Auxiliary TC3	Auxiliary TC3 Range
Auxiliary TC4	Auxiliary TC4 Range
Auxiliary TC5	Auxiliary TC5 Range
Ink Number	Ink Number Range
Auxiliary Ink	Auxiliary Ink Range

To sift for a timecode or keycode number within a specific range:

1. Select Bin > Custom Sift.

   The Custom Sift dialog box opens.

2. Type the timecode (or keycode) number for the range in which you want to sift.
3. Click the Column or Range to Search menu, and select a range; for example, Start to End Range or Mark In to Out Range.

   The criterion “contain” appears in the Criterion menu. If you try to change this criterion, no information appears in the Column or Range to Search menu.

4. Click OK.

   The bin displays those clips that encompass the timecode (or keycode) number that you entered.

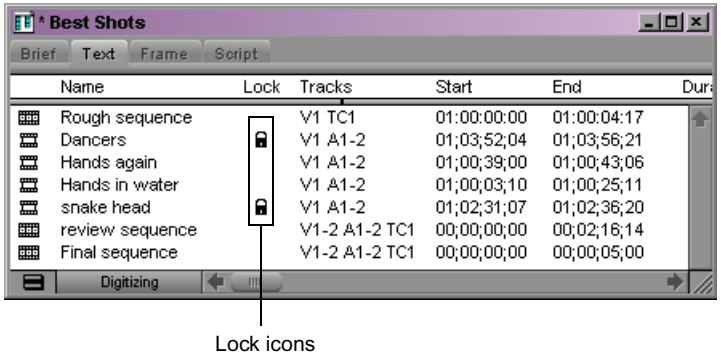
Locking and Unlocking Items in a Bin

You can lock any items in a bin — including source clips, master clips, subclips, and sequences — to prevent deletion. When you lock clips in a bin, you lock their associated media files on your desktop as well.

To lock items:

1. Click a clip, subclip, or sequence to select it. Ctrl+click (Windows) or Shift+click (Macintosh) additional clips, if necessary.
2. Select Clip > Lock Bin Selection.

   A Lock icon appears for each locked clip in the Lock column of the bin in Text view.



If the Lock column is not displayed, you might have hidden that column. For information on hiding and restoring bin columns, see "Manipulating Bin Columns" on page 223.

To unlock previously locked items:

1. Select the items in the bin.
2. Select Clip > Unlock Bin Selection.

You can use the clip-locking feature along with archiving software to automatically archive all locked media files. For more information on archiving locked files, see your archiving software's documentation.

Selecting Offline Items in a Bin

Offline items are clips, subclips, or sequences that are missing some or all of their original media files or that have never been captured.

To identify offline items, do one of the following:

- Select Bin > Select Offline Items.
- Click the Bin Fast Menu button, and then select Select Offline Items.

  The bin highlights all items that are missing media files.

To identify offline items in the Timeline, see "Highlighting Offline Media Clips" in the Help.

Selecting Media Relatives for an Object

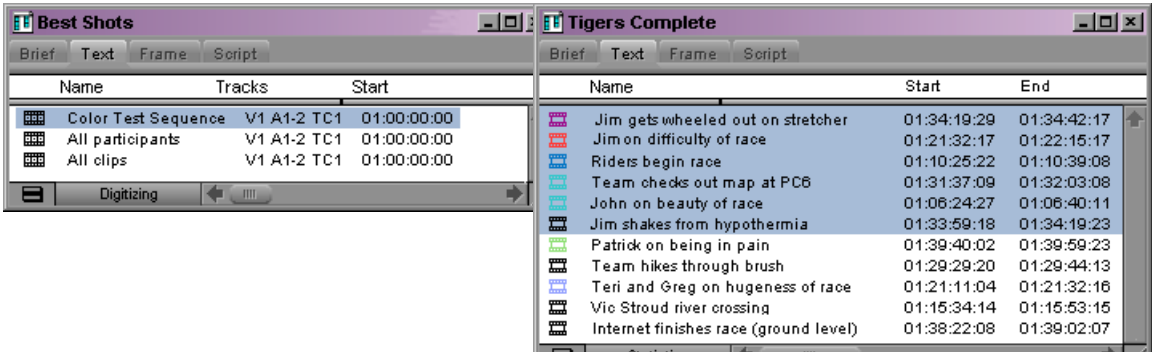
When you identify the *media relatives* of a selected clip or sequence, your Avid editing application highlights all other clips linked to the selected clip, such as subclips or other sequences.

To identify media relatives:

1. Open the bin that contains the selected clip or sequence.
2. Open any other bins that might contain the media relatives that you want to find.
3. Resize and position the bins so that you can see their contents.

   Text view is the best display for viewing as many objects as possible.
4. Select the clip or sequence, and select Bin > Select Media Relatives.

   The system highlights all related objects in all open bins.



You can also use the Media tool to look at the captured video and audio data files stored on your media drives. For more information on the Media tool, see "Using the Media Tool" in the Help.

Selecting Sources Used by an Object

Use the Select Sources command to identify all the sources used by a particular object. For example, if you select a sequence as the object, use the Select Sources command to identify every master clip, subclip, tape, and media file that is a source for that sequence.

To identify sources for a clip or sequence:

1. Select one or more objects in a bin.
2. Select Bin > Select Sources.

   All sources for the selected objects in all open bins are highlighted.

Selecting Unreferenced Clips

When you select unreferenced clips, your Avid editing application highlights all clips not currently referenced by clips or sequences that are in the open bins. Any master clips, subclips, or effect clips you edited into sequences in the bins are not highlighted.

The Select Unreferenced Clips command is useful for finding unused footage or media.

To identify unreferenced clips:

1. Open the bin containing the sequence or clip that is referenced.
2. Open all other bins containing clips that were used during editing.
3. Select Bin > Select Unreferenced Clips.

   A message box warns you that unreferenced clips will be highlighted in open bins only (items in closed bins are not shown).
4. Click OK.

   All unreferenced clips are highlighted in the open bins.

The Select Unreferenced Clips command is effectively the reverse of the Select Media Relatives command.

Using Text View: Advanced

Text view provides the most complete view of clip information. It uses database columns that you can rearrange and customize to suit your needs.

Manipulating Bin Columns

Use the following procedures to move, align, and delete columns in a bin.

When you align bin columns, the system maintains the same order of columns from left to right but spaces them according to the length of their contents. This is especially useful for removing spaces remaining after you move or rearrange columns.

Deleting a statistical column is the same as hiding the column; you can restore the column at any time by using the Bin Column Selection dialog box. When you delete a custom column, however, you must re-create the column.

For information on selecting column headings to display or hide them in the bin, see “Using Text View” in the Help.

You can also duplicate columns, add customized columns, and change the heading name of columns in a bin, as described in the following procedures.

To move a text column in a bin:

1. Click the heading of the column that you want to move.

   The entire column is selected.

2. Drag the column to the position you want, and release the mouse button.

   The column appears in the new position, and columns to the right are moved to make room.

To align bin columns:

- Select Bin > Align to Columns.

To delete a column:

1. Click the column heading in a bin.
2. Do one of the following:
   - Select Edit > Delete.
   - Press the Delete key.

   The column disappears from the view, and surrounding columns close to fill the space.

Duplicating Bin Columns

You can duplicate existing columns containing timecode information into other compatible columns that you target in a dialog box.

To duplicate a timecode column:

1. Select the column you want to duplicate by clicking its heading.
2. Select Edit > Duplicate.

   The Select dialog box opens.
3. Select a column name from the list.

   The column must contain the same type of data for the copy to occur. For example, you can copy start timecodes to the Auxiliary TC column, but you cannot copy timecodes to the Pullin column.
4. Click OK.

   The column of information appears in the column you designated.

When you duplicate a timecode column (Start, TC 24, TC 25, TC 25P, or TC 30), the values for master clips and subclips are converted to the appropriate timecode. For more information, see "Displaying Timecodes in a 24p or 25p Project" on page 237.

Adding Customized Columns to a Bin

In addition to the standard column headings, you can add your own column headings to describe information about clips and sequences. For example, you might want to add a column heading to describe what kind of shot (close-up, wide shot, master shot, extreme close-up, and so on) is used in a clip.

To add a new custom column:

1. Click an empty area to the right of the current headings in the headings box.
2. Move any existing column to the right or left to create an empty area.
3. Type the column heading you want, and press Enter (Windows) or Return (Macintosh). Column headings must contain a maximum of 14 characters, including spaces.

   This places the pointer in the data box, beside the first clip in the bin.
4. Select Bin > Align to Columns after you have entered the new column heading.
5. Type the information, and press Enter (Windows) or Return (Macintosh) to move to the next line.

Changing a Custom Bin Column Heading

You can change the heading name of custom columns only. You cannot change any of the standard column headings.

To change the name of a custom column:

1. Press and hold the Alt key (Windows) or Option key (Macintosh), and click the heading to highlight it.
2. Type the new text for the heading, and press Enter (Windows) or Return (Macintosh).

Tracking Frames Based on File Name

Bins can display a digital file name for each frame in addition to key numbers, ink numbers, and other reference numbers. Tracking frames with the frame number is useful when using the film scanning process where each frame is an independent file. It is also useful when working with effects and animation processes that are dependent on a frame-based counting scheme. You can include the frame number when generating a cut list using FilmScribe.

The naming and counting scheme consists of a prefix (8 character maximum), separated by a dash (-), and followed by 6 characters that count as total frames. For example, FXS32v01-000001 identifies the first frame of a series of frames that belong to an FX shot for Scene 32 version 1. As the FX shot progresses during the creative process, the version number increases.

To compensate for offsets, you can subtract the number of header and information frames from 999999 when entering the frame number. For example, if the first frame of picture is 1 and there are 8 frames of header and identification frames you would enter FXS32v01-999993 for the frame number.

To display the frame count numbers in a bin and cut list:

1. In the Film and 24p Settings dialog box of the Avid editing application, select Frame Count from the “Ink Number Default Edge Type” option or the “Auxiliary Ink Default Edge Type” option.
2. In a bin, select Ink Number or Auxiliary Ink from the Bin Headings dialog box.

   The Ink Number and Auxiliary Ink columns display the frame count numbers in the bin.
3. Open the bin in FilmScribe and choose Ink Number or Aux Ink options. Then generate the cut list.

   The cut list includes the frame count numbers.

To display the frame count numbers above the Source or Record monitors in the Avid editing application:

1. Follow the steps for displaying the frame count numbers in a bin.
2. From the Tracking Information Menu above the monitor, select either Ink Number or Aux Ink.

Managing Clip Information in Text View

You can manage clip information in bin columns in several ways. These methods include moving information between whole columns, copying information between cells, and modifying clip data.

Moving Within Column Cells

You can use the keyboard shortcuts described in the following table to move from cell to cell in bin columns:

Shortcut	Description
Tab	Moves the pointer to the parallel cell in the next column. You can continue to press the Tab key to scroll through the cells to the right until the cell in the last column is highlighted. The next time you press the Tab key, the cell in the first column is highlighted.
Shift+Tab	Moves the pointer left to the cell in the previous column. You can continue to press Shift+Tab to scroll through cells to the left until the cell in the first column is highlighted. The next time you press Shift+Tab, the cell in the last column is highlighted.
(Windows) Enter (on main keyboard)	Enters any new information typed in the cell and moves the pointer down to the cell in the next row. You can continue to press Enter to scroll down the column until the last cell in the column is highlighted. The next time you press Enter, the first cell in the column is highlighted.
(Windows) Shift+Enter (on main keyboard)	Move the pointer up to the cell in the previous row. You can continue to press Shift+Enter until the cell in the top row is highlighted. The next time you press Shift+Enter, the cell in the last row is highlighted.
(Macintosh) Return	Enters any new information typed in the cell and moves the pointer down to the cell in the next row. You can continue to press Return to scroll down the column until the last cell in the column is highlighted. The next time you press Return, the first cell in the column is highlighted.
(Macintosh) Shift+Return	Move the pointer up to the cell in the previous row. You can continue to press Shift+Return until the cell in the top row is highlighted. The next time you press Shift+Return, the cell in the last row is highlighted.

Modifying Clip Information

You can change or modify the information in certain columns for your master clips, subclips, tapes, and other objects stored in the bin. This is especially useful if some of the data is incorrect or if you need to conform information for organizational purposes.

The following conditions apply to modifying clip information:

- When you modify a clip's information, related objects are automatically updated to reflect the new data. For example, if you change the name of a clip, the updated name appears in the sequences that use the clip.
- You cannot modify some data after capture because changes would prevent you from playing back and editing the material successfully.
- You cannot change sequence data even though it appears in your bin. The only way to modify sequence data is to edit the sequence itself. You can, however, change the name and start time for the master timecode track, as described in "Changing the Sequence Name and Timecode" in the Help.

You can modify data in two ways:

- Modify some data directly for master clips, subclips, and other objects stored in a bin. See "Modifying Data Directly" on page 227.
- Use the Modify command to change specific information for master clips only. See "Using the Modify Command to Modify Data" on page 231.

Modifying Data Directly

When you modify information in a bin directly, you click a cell and type the new information. For example, you can type a new name for a clip or correct the start and end timecodes.

You can directly modify any data in the bin while logging and prior to capture. After the footage is captured, however, you can directly modify information only in selected headings, with restrictions, as shown in the following table.

Modifiable Bin Headings

Heading	Restrictions
(Clip) Name	No restrictions.
Mark IN	Altering the mark IN also alters the IN to OUT duration. This replaces any previous mark.

Modifiable Bin Headings (Continued)

Heading	Restrictions
Mark OUT	Altering the mark OUT also alters the IN to OUT duration. This replaces any previous mark.
Cadence	Ctrl+click and choose from the menu. All clips with the same tape name will change according to what is selected.
Color	No restrictions.
Color Framing	Must be according to tape specifications. See "Tracking Color Frame Shifts" on page 378.
Comments	No restrictions.
Auxiliary timecodes, 1–5	No restrictions.
Journalist	No restrictions.
Production	No restrictions.
KN (Key Number) Start	Only for 24p projects, 25p projects, and matchback projects. Altering the starting key number also alters the KN End to maintain the duration. This can cause discrepancies with any auxiliary timecode information that you entered manually.
Pullin	Only for 24p projects and matchback projects. You can only alter pullin data imported from a telecine-generated list directly before capturing or after unlinking. See "Modifying the Pulldown Phase Before Capturing" on page 128. (NTSC only) You can directly modify the pullin for sequence; see "Changing the Default Pulldown Phase for Sequences" on page 575.
Start	No restrictions.
Shoot Date	No restrictions.
Soundroll	You can modify after you enter a Soundroll.
Take	No restrictions.
TapeID	No restrictions.
TC 24	No restrictions.
TC 25	No restrictions.
TC 25PD	No restrictions.
TC 30	No restrictions.

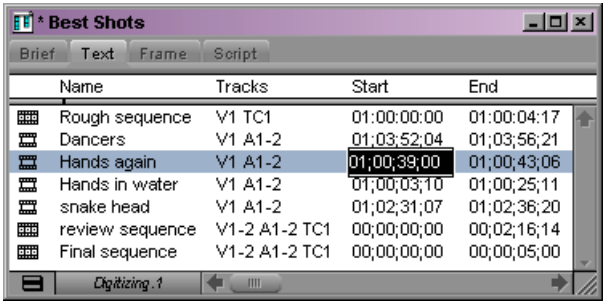
Modifiable Bin Headings (Continued)

Heading	Restrictions
TC 30NP	No restrictions.

Modifying tape names and timecodes affects any key numbers entered for the selected clips.

To modify the clip data directly in a bin:

1. Click the Text tab in the bin to enter Text view.
2. Click the cell that you want to modify. Select only one item at a time. In the following example, the timecode data is highlighted.



3. Click the cell again to enter text.

   If the pointer does not change to an I-beam, you might be attempting to modify a column that cannot be directly modified.

4. Type the new information, and press Enter (Windows) or Return (Macintosh).

Using the Modify Command to Modify Data

The Modify command gives you specialized control over groups of clip information. For example, you can use the Modify command to change the name of source tapes, or to increment or decrement the start and end timecodes by a specified length of time for one or several clips at once.

You can apply changes with the Modify command to master clips only; subclips and sequences are not altered in this way. In addition, you can perform modifications that only alter the end timecodes or the tracks before capture, as described in the following table.

Modify Command Options

Type of Modification	Options	Description
Set Timecode Drop/ Non-drop	Drop, Non-drop	Changes the timecode format between drop-frame and non-drop-frame. Setting must match the timecode format of the tape.
Set Timecode By Field	Start or End	Changes either the start or end timecode. Only start timecodes are altered after capture.
	Hour, Minutes, Seconds, Frames	Allows you to enter custom timecode.
Increment Timecode	Start or End	Changes either the start or end timecode. Incrementing the start timecode automatically modifies the end timecode by the same amount. Only start timecode can be incremented after capture.
	Timecode text box	Allows you to enter custom incremental timecode.
Decrement Timecode	Start or End	Changes either the start or end timecode. Decrementing the start timecode automatically modifies the end timecode by the same amount. Only start timecode can be decremented after capture.
	Timecode text box	Allows you to enter custom decremental timecode.
Set Key Number Generic (Prefix)	Key Number text box	Allows you to enter a custom generic key number. Only for 24p, 25p, and matchback projects.
Set Pullin	A, B, C, or D	Selects the pulldown phase to match to the timecode entry (24p and matchback projects only). For more information, see "Setting the Pulldown Phase" on page 121. After capturing, the clip must be unlinked. See "Modifying the Pulldown Phase Before Capturing" on page 128.
Set Tracks	V, A1, A2, A3, A4, A5, A6, A7, and A8 track selector buttons	Changes the clip's configuration of tracks (film projects only). The clip must be unlinked. See "Unlinking Media Files" on page 277.
Set Source	None	Opens the Select Tape dialog box. Selects another source tape name for the clips that should match the original source tape name.

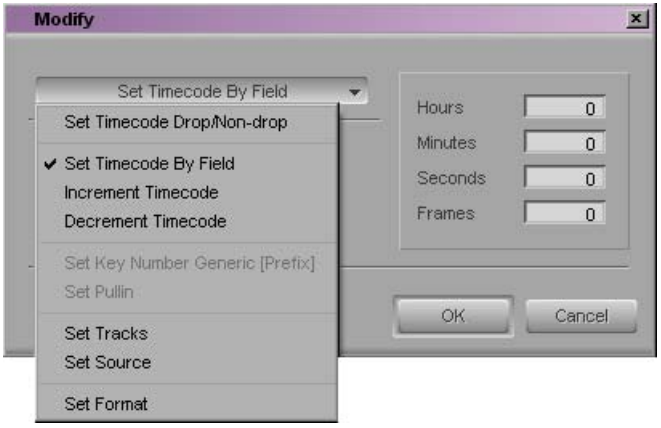
Modify Command Options (Continued)

Type of Modification	Options	Description
Set Disk Label	Set label	Allows you to change the name assigned to an XDCAM disk. For more information, see "Importing Media from XDCAM Devices" on page 193.
Set Format	Compatible formats	Allows you to change the format of a sequence. The choice of formats is limited to the compatible frame rate of the current sequence. This option is useful if you are working with downconverted HD material in an offline/online workflow. For more information, see "Modifying the Format of a Sequence" on page 832 and "Converting a 23.976p NTSC Sequence to 720p/23.976" on page 834.

To modify selected data using the Modify command:

1. Open the bin and click the Text tab.
2. Click the icon to the left of the clip, sequence, or other object you want to modify. Ctrl+click (Windows) or Shift+click (Macintosh) each additional object you want to modify.
3. Select Clip > Modify.

   The Modify dialog box opens.
4. Click the Modify Options menu, and select an option.



5. Select an option or type information into the text boxes (timecode values, for example) when they appear.
6. Click OK.

   The modification takes effect.

Copying Information Between Columns

To copy column information to another column:

1. Select the column that you want to copy.
2. Select Edit > Duplicate.

   The Select dialog box opens, prompting you to target a column for the data.
3. Select the target column for the data, and click OK.

Copying Information from Another Cell in a Custom Column

To copy information from another cell in a custom column:

1. Press and hold the Alt key (Windows) or Option key (Macintosh) while you click in the destination cell to reveal a menu of all items entered in that column.
2. Select the text from the menu.

   The text appears in the cell.

Selecting a Film Gauge

The film gauge consists of the film size and either the number of perfs per frame (for 35mm and 65mm) or the number of frames per foot (for 16mm). You specify the gauge in any of the film-gauge columns (Aux Ink Film, Ink Film, and Master Film).

You cannot modify the KN Film column.

To specify the gauge of the film:

- Ctrl+click the cell, and then select one of the following film sizes and perf count or frame count:
  - 35mm, 4 perf
  - 35mm, 2 perf
  - 35mm, 3 perf
  - 35mm, 8 perf
  - 16mm, 40 perf
  - 16mm, 20 perf
  - 65mm, 15 perf (used in IMAX® films)
  - 65mm, 10 perf
  - 65mm, 8 perf
  - 65mm, 5 perf
  - VistaVision®

Tracking 3-Perf Counts

You can track 3-perf counts in film projects. The perf value is an extension of the key number, and appears in the KN Start, Ink Number, and Aux Ink Number bin columns. A sample key number might be as follows:

KJ 12 1234-3456-10.3

The ".3" at the end of the key number represents the perf value.

To specify the perf value:

- Enter 1, 2, or 3 in the appropriate bin column cell.

Selecting an Edgecode Type

There is one edgecode per foot of film. You enter an edgecode type for a particular place on the film in any of the edgecode-type bin columns (Aux Ink Edge, Ink Edge, Master Edge).

Select the appropriate edgecode type for a clip so you can track frames in the Timecode window, above the Source/Record monitor, or in FilmScribe.

To select an edgecode type:

- Ctrl+click the cell, and then select the edgecode type that matches the edgecodes on the film.

The following table describes the edgecode types and the appropriate format for each.

Edgecode Types and Formats

Edgecode Type	Edgecode Format	Sample Edgecode
Key Number	XX NNNNNN NNNN+NN (Film type Film ID Feet on film+Frame in foot)	KL 43 5146-0152+00
Edgecode (4 count)	NNN-NNNN+NN (Identifier-Feet on film+Frame in foot)	103-9025+03
Edgecode (5 count)	NNN-NNNNN+NN (Identifier-Feet on film+Frame in foot)	203-09025+03
Frames	NNNNN	45678

Sorting Clips in Text View

Sorting clips arranges them in either numerical or alphabetical order, based on the data in the column you select as the sorting criteria. You can sort clips in several different ways, including an ascending sort, a descending sort, or a multilevel sort.

You can also sort clips by color if you have assigned colors to the clips. For more information, see "Assigning Colors to Bin Objects" on page 214.

You can automatically sort clips and sequences in Text view only. If you need to view sorted clips in Script or Frame view, sort them in Text view first and then return to Script or Frame view.

If you want to sort clips in a customized order in Text view, you must first rearrange the clips in Script view, and then return to Text view. For information about Script view, see "Rearranging Clips in Script View" in the Help.

To sort clips in ascending or descending order:

1. With a bin in Text view, click the heading of the column that you want to use as the criterion.

   The column is highlighted.

2. Do one of the following:

   - To sort in ascending order, select Bin > Sort.
   - To sort in descending order, press and hold the Alt key (Windows) or Option key (Macintosh) while you select Bin > Sort Reversed.

If the Sort command appears dimmed in the menu, you have not selected a column.

To reapply the last sort:

- Select Bin > Sort Again with no column selected.

This step is especially useful after you have added new clips to a sorted bin.

To perform a multilevel sort using the information in the bins:

1. With a bin in Text view, arrange the columns in the bin to establish the primary column.

   The column that appears farthest to the left in the bin has higher sort priority.
2. Select the columns you want to contribute to the sort criterion.
3. Select Bin > Sort.

   The objects in the bin are sorted.

To sort clips by color:

1. Click the Color column heading in the bin.
2. Select Bin > Sort.

   The objects in the bin are sorted by color.

Colors are sorted by hue, saturation, and value.

Displaying Timecodes in a 24p or 25p Project

When you are working with 24p and 25p projects (PAL with pulldown), you can add timecode columns to bins or the Media tool to enter and display starting timecodes in several timecode formats for master clips, subclips, and sequences.

For information on displaying timecodes in the Timeline and the Tracking Information display, see "Displaying Timecode Tracks in the Timeline" on page 320 and "Displaying Tracking Information" in the Help.

After you add a timecode column (TC 24, TC 25, TC 25P, TC 30, or TC 30NP) to a bin, you can use the Duplicate command to convert the values for master clips and subclips to the appropriate timecode for that column.

For example, when working with a 24p NTSC project, if you duplicate the Start column values to one of the timecode columns and the Start column contains a master clip with the timecode 01:00:00:15, the timecode is converted to the timecode of that column.

The TC1 track in the Timeline represents the timecode of the project in which you are working. For example, when you are working in a 24p NTSC project, the TC1 track displays the same timecode as the TC 30 track.

Frame Counting for Timecodes

The following table shows the frame count for each timecode. The timecodes are listed as 24 for 24 fps, 25 for 25 fps, 25P for 25 PAL with pulldown, 30 for 30 fps (the count skips six frames to fit 30 frames into 24 fps), 30NP for 30 fps with no pulldown, and 60 for 60 fps.

Timecode Frame Counts

Timecode	Frames
24	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 00
25	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25P	00 01 02 03 04 05 06 07 08 09 10 11 13 14 15 16 17 18 19 20 21 22 23 24 00
30	00 01 03 04 05 06 08 09 10 11 13 14 15 16 18 19 20 21 23 24 25 26 28 29 00
30NP	00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Adding Timecode Columns to a Bin or the Media Tool

To add timecode columns to a bin or to the Media tool:

1. Select Bin > Headings.

   The Bin Column Selection dialog box opens.
2. Ctrl+click (Windows) or click (Macintosh) the timecode columns you want to display.
3. Click OK.

   The timecode columns appear in the bin or the Media tool.

Adding Timecode Values to the Timecode Columns

To add timecode values to the timecode columns:

1. Open a bin or the Media tool.
2. Add the Start column and the timecode column with the format you want to use.
3. Select the Start column.
4. Select Edit > Duplicate.

   The Select dialog box opens.
5. Select the timecode heading from the list.
6. Click OK.

   The values for master clips, subclips, and sequences in the Start column are converted to the appropriate timecode format and entered into the column you selected.

Bin Column Headings

You can select individual or multiple headings to be displayed or hidden in a bin. For a procedure on how to select column headings, see “Manipulating Bin Columns” in the Help.

Your Avid editing application provides the ability to track multiple film gauges within a bin and within a sequence. Bin column headings allow you to display detailed information about edgecodes, film gauges, and source information such as scanned file type, color lookup table, resource location, and so on.

If you are working in an Interplay environment, the list of bin column headings include audio sample rates and video resolutions. Select from these headings to display multiple sample rates and resolutions in the bin. For more information, see “MultiRez Bin Headings” in the Help.

The following table describes the bin column headings. Some of the columns allow you to enter or modify the information.

This table includes all bin column headings available in Avid editing applications. The columns that appear depend on the model of your Avid editing application project in which you are working.

Bin Column Headings

Heading	Description
Name	Heading does not appear as a column selection, but it always appears in the bin. The column contains the name of the clip or sequence (you can rename a clip or sequence after it has been captured).
Audio Bit Depth	Audio bit depth used when you work with audio files: 16 bit or 24 bit.
Audio Format	Audio format of master clips (AIFF-C, SD II, or WAVE).
Audio SR	Audio resolution (sample rate).
Aux TC 24	Original HDTV sources (1080p/24) or audio DATs created for PAL feature film productions that use in-camera timecode.
AuxInk Dur	Length of the clip, expressed in the auxiliary ink number. You cannot modify this number.
AuxInk Edge	Type of edgecode used in the auxiliary ink number. Ctrl+click the cell, and then select the type of edgecode. See “Selecting an Edgecode Type” on page 235.
AuxInk End	Ending auxiliary ink number for the clip. You cannot modify this number.

Bin Column Headings (Continued)

Heading	Description
AuxInk Film	Film gauge for the auxiliary ink number. Ctrl+click the cell, and then select the gauge. See "Selecting a Film Gauge" on page 234.
Auxiliary Ink	Auxiliary ink format settings allow you to display an additional type of ink number. This lets you track additional types of film information for different film gauges. Used for 24p projects, 25p projects, and matchback projects only. Auxiliary Ink is the starting frame for the clip.
Auxiliary TC1 through TC5	You can enter an auxiliary timecode, such as Aaton® or Arri, or another timecode for editing film or audio timecode for film. (*Not restricted to film projects.*)
CFPS	Captured frames per second.
Cadence	Type of pulldown present on the source NTSC tapes when in a 23.976 or 24p project.
Camera	Camera used to film this clip. This feature is used in multicamera shoots.
Camroll	Camera roll containing this clip. Used for 24p projects, 25p projects, and matchback projects only.
Color	Color of the bin objects for organizing the objects.
Creation Date	Date and time the clip was logged or captured.
Disk Label	For XDCAM media, this heading displays the user-supplied disk label created when the media file was imported. For other media, the heading displays the disk label of the drive from which the clip was imported. For more information, see "Importing Media from XDCAM Devices" on page 193.
DPX	Frame-counting field for Digital Picture Exchange, a SMPTE standard describing frames scanned from film. The format is the following: a descriptor of up to 32 alphanumeric characters, followed by a hyphen (-), followed by a six-digit frame count, for example, DPXChildDocu-023657.
Drive	Last known drive on which the media for that master clip existed.
Duration	Length of the clip.
End	Timecode of the clip's tail frame.
FPS	Play rate: the number of frames to be displayed each second. The default is 29.97 for NTSC and 25 for PAL for video. The play rate can also be 24 or 23.98.
Film TC	Timecode used on film. Used for 24p and 25p projects only.
Format	The format of a clip or sequence as determined by the project type, such as 30i NTSC or 1080i/59.94.This is especially useful if you have both SD and HD clips in the same bin.

Bin Column Headings (Continued)

Heading	Description
Frame	Displays the same frame that is displayed when you select Frame view for the bin. See "Using Frame View" in the Help. *It can take longer for the screen to display frames than text. Therefore, working with frames can slow down the work that you do with bins.*
IN-OUT	Length of the marked segment, if any.
Ink Dur	Length of the clip, expressed in ink number. Used for 24p projects, 25p projects, and matchback projects only. You cannot modify this number.
Ink Edge	Type of edgecode used in the ink number. Ctrl+click the cell, and then select the type of edgecode. See "Selecting an Edgecode Type" on page 235.
Ink End	Ending ink number for the clip. You cannot modify this number.
Ink Film	Film gauge for the ink number. Ctrl+click the cell, and then select the gauge. See "Selecting a Film Gauge" on page 234.
Ink Number	Ink number for the clip. Used for 24p projects, 25p projects, and matchback projects only.
Journalist	First and last name of a person associated with the clip. Metadata imported from a P2 file.
KN Dur	Length of the clip, expressed in feet and frames.
KN End	Ending key number for the clip.
KN Film	Key number film gauge. Ctrl+click the cell, and then select the gauge. See "Selecting a Film Gauge" on page 234.
KN IN-OUT	Mark IN and Mark OUT key number for the clip.
KN Mark IN	Key number for the IN point, if you set one for the clip.
KN Mark OUT	Key number for the OUT point, if you set one for the clip.
KN Start	Starting key number for the clip.
LUT	File name of the color look-up table used for the series of clips or frames.
Labroll	Labroll containing the clip.
Lock	Specifies whether the clip is locked against deletion.
Mark IN	Timecode for the IN point, if you set one for the clip.
Mark OUT	Timecode for the OUT point, if you set one for the clip.

Bin Column Headings (Continued)

Heading	Description
Master Dur	Length of the final master sequence, expressed in feet and frames. You cannot modify this number.
Master Edge	Type of edgecode used in the final master sequence. Ctrl+click the cell, and then select the type of edgecode. See "Selecting an Edgecode Type" on page 235.
Master End	Ending key number for the final master sequence. You cannot modify this number.
Master Film	Gauge of the final master sequence. Ctrl+click the cell, and then select the gauge. See "Selecting a Film Gauge" on page 234.
Master Start	Starting key number of the final master sequence.
Modified Date	Date and time a sequence was last edited or changed.
Offline	Track names for any media files that are offline.
Perf	Film edge perforations format used for 3-perf projects. Used for projects brought forward from earlier releases only; now superseded by the film size and perf options available in Ink Film, AuxInk Film, KN Film, and Master Film.
Production	Name of the production associated with the clip. Metadata imported from a P2 file.
Project	Project under which the media was originally captured.
Pullin	Telecine pulldown of the first frame of the clip (pulldown phase). Pullin can have the values A, B, X (matchback only), C, or D. Used for 24p projects and matchback projects only. (NTSC only)
Pullout	Telecine pulldown of the last frame of the clip. Pullout can have the values A, B, X (matchback only), C, or D. Used for 24p projects and matchback projects only. (NTSC only)
Reel #	Source reel number.
Scene	Scene number of the clip.
Shoot date	Date the footage was shot.
Slip	Number and direction of perfs for subclips (audio clips only).
Sound TC	Timecode for audio.
Soundroll	Sound roll this clip came from.
Start	Timecode of the clip's head frame.
TC 24	24-fps timecode.

Bin Column Headings (Continued)

Heading	Description
TC 25	25-fps timecode, no pulldown.
TC 25PD	25-fps timecode with PAL pulldown.
TC 30	30-fps timecode with 2:3 pulldown.
TC 30NP	30-fps timecode with no pulldown (frames 00 through 29).
Take	Take number of the scene.
Tape	Source tape name.
TapeID	Tape ID number.
Tracks	All tracks used by this media object.
Transfer	Frame-counting field for sources that have been prepped for transfer. The format is the following: a descriptor of up to 32 alphanumeric characters, followed by a hyphen (-), followed by a six-digit frame count, for example, TransferChildDocu-023657.
UNC Path	Universal Naming Convention that specifies the location of resources on a server. The location you enter becomes a hyperlink to that location. Ctrl+click the cell, and then type the location.
VFX	Frame-counting field for visual effects. The format is the following: a descriptor of up to 32 alphanumeric characters, followed by a hyphen (-), followed by a six-digit frame count, for example, FXChildDocu-023657.
VFX Reel	Source reel identification for the FX shot.
VITC	Vertical interval timecode.
Video	Resolution under which the media for that clip was captured.
Video File Format	Clip video format (OMF, AAF, MXF, or none).

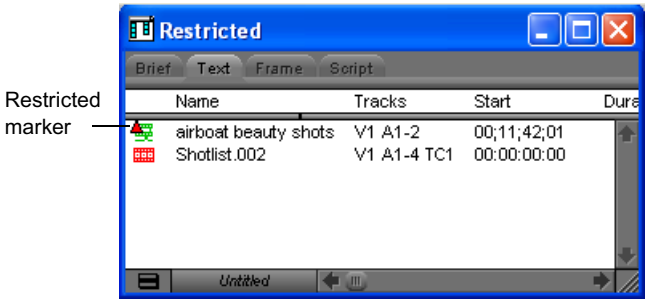
Working with Restricted Material

Broadcast facilities sometimes need to manage digital rights by restricting the use of footage. You can mark restrictions on clips in Avid Interplay Assist. When you bring marked footage into your Avid editing application, you can see the restriction marker on the clip icons in the bin, and you are warned about the restriction before you display or output that footage. You can also use Avid Interplay Access to search the database for material that contains restrictions.

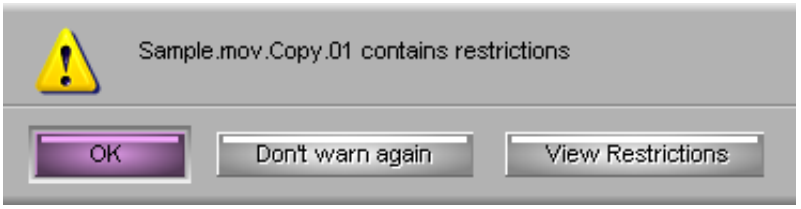
You are also warned about the restriction when you display the restricted material in the monitor and when you try to perform a digital cut, send the material to playback, or export it. You can choose to continue, and you can view the reason for the restriction in the Restrictions tool. You can change restriction comments in Interplay Assist and then view them in the editing application.

Displaying or Outputting Restricted Material

The clip icon of any clip that contains restricted material displays the Restricted marker.



When you first open a restricted clip or load a sequence containing restricted clips, a warning message box opens.



The warning appears every time you perform this operation (that is, opening or displaying a clip) on restricted material in this session, not just on the present clip.

The same warning appears when you try to do any of the following:

- Perform a digital cut
- Send the sequence to playback
- Export

If you are sending more than one clip to export, the message box lists all the clip names that contain restricted material.

If you know that you are allowed to use all restricted material in the current project and can safely ignore the warning for this particular operation, you can continue with your editing or output task.

To ignore the warning for the rest of the editing session and continue with editing or output:

- Click the "Don't warn again" button.

  You no longer see restriction warnings for the current clip or any other clip in this editing session. When you quit your Avid editing application and then open it, you see the warning again the first time you try to display or output restricted material.

Clicking "Don't warn again" in the warning message box stops the warning from appearing again only for the current operation in the current editing session. For example, if you click it after displaying a clip in the Source monitor, you can load additional restricted clips without seeing the message. If you select those clips for Export, however, you see the warning again.

Disassociating Restrictions

The restriction is tied to the source tape name and timecode. You might disassociate the restriction from the clip if you change those values in the bin. For more information about bins, see "Working with Bins: Basics" in the Help.

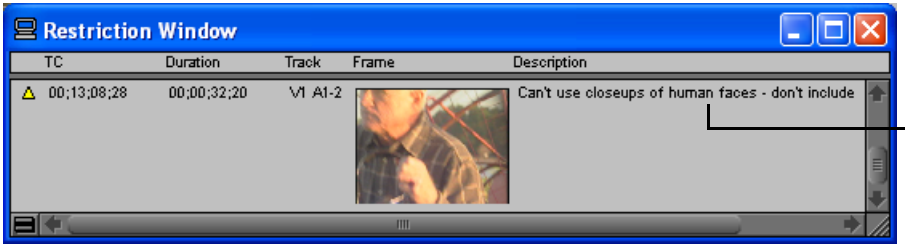
Viewing Restriction Comments

You can view the reason particular material is restricted.

To view Restriction comments, do one of the following:

- Click the View Restrictions button in the warning message box when it opens.
- Select Tools > Restrictions.

  The Restriction window opens. It displays the name of each restricted clip, its head frame, and a description. The description contains the comments associated with the restriction that you entered in Avid Interplay Assist. For more information, see the Avid Interplay Assist documentation.



Changing Restriction Comments

You can change the comments for a particular range of material in Avid Interplay Assist while your Avid editing application is open.

To see changes in Restriction comments while you are editing:

1. Change the comments in Avid Interplay Assist. For more information, see the Avid Interplay Assist documentation.
2. In the editing application, select Tools > Remote Assets.
3. Navigate to the changed clip, and drag it into the bin again.

   The changes appear in the Restriction window.

Searching the Database for Restrictions

You can use extended search capabilities to search for restrictions in Avid Interplay Access. For general information about searching in Interplay Access, see the *Avid Interplay Access User's Guide*.

The following table lists the Avid Interplay restriction attribute name, its description, and the values you can enter for it when specifying an extended search.

Attribute Name	Description	Values
DRM	Digital Rights Management, the cover title for the use of restrictions.	• Has DRM • Does not have DRM

Printing Bins

You can print entire bins or individual frames.

To print entire bins:

1. Make sure your printer is correctly set up. See your printer documentation, the Windows or Macintosh documentation, or your system administrator.
2. Click the Brief tab (Brief View), Text tab (Text View), Script tab (Script View), or Frame tab (Frame View) of the bin to select the view you want to print.
3. Select File > Page Setup.

   The Page Setup dialog box opens, reflecting the specific options for your printer.
4. Select the appropriate options from the Page Setup dialog box.

5. Click OK (Windows) or click Print (Macintosh).
6. Select File > Print Bin.

   The Print dialog box opens, reflecting the specific options for your printer.
7. Select the Print options.
8. Click OK (Windows) or Print (Macintosh).

   The system prints the active bin.

To print a single frame of a clip or sequence:

1. Load a clip or sequence into the Source or Record monitor.
2. Select the frame you want to print.
3. Select File > Print Frame.

   The Print dialog box opens.
4. Select the Print options.
5. Click OK (Windows) or Print (Macintosh).

   The system prints the frame currently displayed in the active monitor.

Preparing Digital Bars and Tone

If you expect to output your final sequence as a digital cut that requires calibration before playback (a digital cut that will be broadcast, for example), in most cases you will need a clip of color bars. You can add the clip to the front of the sequence, or you can output the clip separately as an assemble or insert edit onto tape during recording of a digital cut.

There are several ways to acquire a clip of bars, each with different advantages:

- **Record bars and tone from a house generator.** This method requires the least effort with good results because you record high-quality bars and tone simultaneously, with a minimum of calibration. Not all facilities, however, have a house generator.
- **Record bars and tone from a videotape.** This method allows you to record bars and tone simultaneously, but you must calibrate carefully to ensure accuracy. In addition, the final clip reflects the quality of the source tape recording.
- **Record bars from an external color bar generator.** This method provides good results, but you must have a color bar generator available, and you must rearrange your system inputs to attach the generator. In addition, you must acquire tone separately and sync it with bars within your Avid editing application.

- **Import a file of bars.** This method provides the highest quality results because the source image is already digital. If the file is accurate, the quality of the clip is ensured. You must, however, acquire tone separately and sync it with bars within your Avid editing application. For more information, see "Importing Color Bars and Other Test Patterns" on page 248.

Importing Color Bars and Other Test Patterns

Avid editing applications supply files for color bars and other test patterns. You can import 8-bit PICT files or 16-bit TIFF files.

To import a test pattern from a file:

1. Open an existing bin, or create a new one for the test pattern.
2. Select the destination bin.
3. Select File > Import.

   The Select Files to Import dialog box opens.
4. Do one of the following:
   - (Windows) Click the Files of Type menu, and select Graphic Files.
   - (Macintosh) Click the Show menu, and select Graphic Documents.
5. Use the Look in menu (Windows) or the From menu (Macintosh) to locate the folder containing the test pattern file. Test pattern files are located in the following folder:
   - (Windows) *drive*:\Program Files\Avid*Avid editing application* \SupportingFiles\Test_Patterns
   - (Macintosh) Macintosh HD/Applications/*Avid editing application*/ SupportingFiles/Test_Patterns
6. Select a test pattern file from the File browser (Windows) or Source File list (Macintosh) for importing:
   - 8-bit PICT files are located at the top level of the Test_Patterns folder.
   - 16-bit TIFF files are located in the HD_720p, HD_1080i, SD_NTSC, and SD_PAL folders.

   The file name appears in the File Name text box (Windows) or the Go to text box (Macintosh).
7. Click Options to adjust the Import settings.

   The Import Settings dialog box opens.

8. Click the Image tab, and select the following options:
   a. Select 601/709, non-square from the Aspect Ratio, Pixel Aspect area.
   b. Select 601/709 from the Color Levels area.
   c. Click OK to save the settings and close the dialog box.
9. Click Open. The clip for the imported file appears in the selected bin.

   When you import SMPTE_Bars.pct, the file does not exactly match the SMPTE bars generated by the Video Output tool. The I and Q blocks in the bottom portion of the pattern cannot be exactly represented in the RGB color space used when importing files. If you must have I and Q blocks correct in a sequence, do one of the following:

   - Record SMPTE bars from a signal generator.
   - Use the Video Output tool to generate SMPTE bars, and record them to tape using the controls on the deck. Then, capture them back into the system from the tape.
10. Create a clip of tone media using the Audio tool. For more information, see "Using the Audio Tool" in the Help.

Match the resolution of the tone to the audio resolution of the sequence.

11. Load the new color bars clip into the Source monitor, and create a subclip of appropriate length for use in sequences (1 minute is a common standard).
12. Select the new subclip, Ctrl+click (Windows) or Shift+click (Macintosh) the audio clip containing the tone, and select Bin > AutoSync.

    A new subclip containing bars and tone appears in the bin.
13. Rename the clip as necessary.

Creating Leader

Film editors traditionally use standard head and tail leaders for cueing and syncing material. You can use digital leaders in your Avid editing application to mark the beginning and ending of tracks and to help you maintain sync, as described in "Managing Sync with Multiple Tracks" on page 353. You can create your own leader for video or film. Whatever you choose for specifications, make all your leader clips the same length, with common sync points.

Creating Video Leader

To create leader for picture tracks:

1. Create a black screen in the Title tool for tail leader, or a white screen for head leader.

   For information on using the Title tool, see “Creating and Editing Titles” in the Help.
2. (Option) Type a title onto the screen that says Tail Leader or Head Leader.
3. Name this clip Head Leader or Tail Leader when you save the title.
4. Create a subclip from an appropriate length of the clip, according to your chosen specifications.
5. (Option) Mark a sync frame in the subclip as follows:
   a. Load the clip into the Source monitor.
   b. Find an appropriate sync point, and add a locator.

      For more information, see “Using Locators” on page 331.
   c. (Option) Double-click the locator in the Source monitor to add a sync point notation that appears on the monitor.

Once the leader is prepared, you can splice the leader during editing onto the tracks that you want to keep in sync. You can use the sync points for visually aligning tracks.

Creating Audio Leader

To create tail leader for audio tracks:

1. Load a clip that includes a section of captured tone into the Source monitor.
2. Create a subclip according to your chosen specifications.
3. Name this new subclip Head Leader or Tail Leader.
4. Load this subclip into the Source monitor.
5. Prepare the sound levels for leader without a sync point (no audio pop) by opening the Audio Mixer tool and bringing the audio level all the way down for the entire clip.

6. Prepare the sound levels for leader that include a sync point (audio pop) by doing the following:
   a. Find the appropriate sync point.

      Step one frame backward and place an add edit before the sync frame; then step two frames forward and place an add edit after the sync frame.

      For information on placing add edits, see “Adding an Edit (Match Framing)” on page 372.
   b. Move the position indicator before the first add edit, and open the Audio Mixer tool.
   c. Bring the audio level all the way down.
   d. Move the position indicator after the second add edit, and use the Audio Mixer tool to bring the level all the way down.

After the leader is prepared, you can splice the leader during editing onto the audio tracks that you want to keep in sync. You can use the sync points for visually aligning tracks.

Chapter 7

Managing Media Files: Advanced

When you capture footage, the system creates digital media files for the video and audio tracks on the media drives attached to your system. Bin tools allow you to organize the clips that reference the media files. In addition, your Avid editing application provides tools and features for directly managing media files for storage and playback efficiency, for backup, and for transfer between systems.

The following topics provide advanced information on managing media files:

- Using Panasonic DVCPRO P2 Equipment
- Finding a Related Media File
- Relinking Media Files
- Unlinking Media Files
- Using Videotapes for Archiving and Restoring Media Files

For basic information about managing media, see “Managing Media Files: Basics” in the Basics Guide for your Avid editing application.

Using Panasonic DVCPRO P2 Equipment

Panasonic’s DVCPRO® P2 equipment records DV, DVCPRO, and DVCPRO 50 media on compact, solid-state memory cards (P2 cards). Avid editing applications support editing of media directly from these memory cards, without the need to capture. You can also write your sequence back to the P2 card. The result is a streamlined workflow that is particularly efficient in news-gathering organizations.

Panasonic P2 Formats

Avid editing applications support the following resolutions, captured by Panasonic P2 equipment at frame rates of 30i NTSC and 25i PAL:

Panasonic Format	Avid Format	Number of Audio Channels
DV	DV 25 411 (NTSC) DV 25 420 (PAL)	2
DVCPRO	DV 25 411 (NTSC and PAL)	2
DVCPRO HD	720p 1080i	4
DVCPRO 50	DV 50 (NTSC and PAL)	4

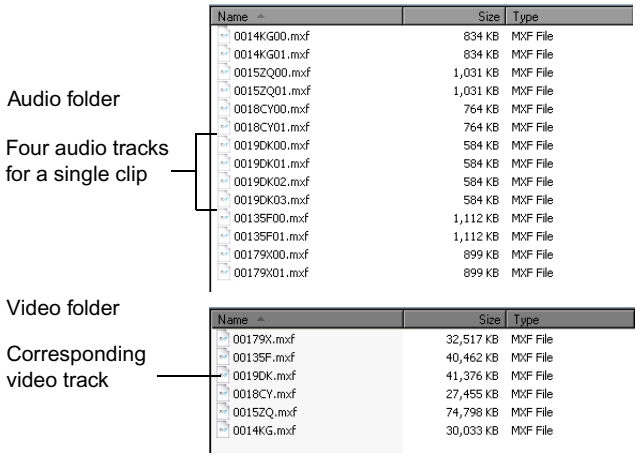
Avid editing applications support one video track and up to four tracks of 48 kHz, 16-bit audio, the maximum you can record on Panasonic P2 equipment.

P2 Files and Folders

Panasonic P2 video and audio media is recorded in MXF format, one of the two media file formats you can use in Avid editing applications. Each P2 card stores MXF files in two folders:

- *drive:* Contents\Audio
- *drive:* Contents\Video

The following illustration shows examples of the MXF audio and video files contained in the Audio and Video folders.


Audio folder
Four audio tracks for a single clip
Video folder
Corresponding video track
Name
Size
Type
0014KG00.mxf 834 KB MXF File
0014KG01.mxf 834 KB MXF File
0015ZQ00.mxf 1,031 KB MXF File
0015ZQ01.mxf 1,031 KB MXF File
0018CY00.mxf 764 KB MXF File
0018CY01.mxf 764 KB MXF File
0019DK00.mxf 584 KB MXF File
0019DK01.mxf 584 KB MXF File
0019DK02.mxf 584 KB MXF File
0019DK03.mxf 584 KB MXF File
00135F00.mxf 1,112 KB MXF File
00135F01.mxf 1,112 KB MXF File
00179X00.mxf 899 KB MXF File
00179X01.mxf 899 KB MXF File
00179X.mxf 32,517 KB MXF File
00135F.mxf 40,462 KB MXF File
0019DK.mxf 41,376 KB MXF File
0018CY.mxf 27,455 KB MXF File
0015ZQ.mxf 74,798 KB MXF File
0014KG.mxf 30,033 KB MXF File

Panasonic P2 devices write individual MXF audio and video media files for each track of each clip. For example, a P2 clip that includes one track of video and four tracks of audio is stored on the P2 card as five individual media files. Within the Avid editing application the five media files are represented as a single clip with audio and video.

Workflow for Editing with P2 Media

The main steps in preparing to edit with media created on Panasonic P2 equipment are:

1. Install the appropriate Panasonic P2 drivers.
2. Mount one or more P2 cards (up to five).
3. Update the drive list.
4. Do one of the following:
   - Import the master clips directly from the P2 card, with or without the media.
   - Drag the master clips from the Media tool to a bin.
5. Use the master clips to edit and output a sequence.
6. Write the clip or sequence back to the P2 card.

A typical workflow is as follows:

1. Import the P2 clips from a P2 card or any device where the P2 contents are stored by selecting File > Import P2 > Clips to Bin.

   The P2 master clip information loads into a bin. This is useful because it is only the clip metadata and it effectively allows you to browse the card contents directly without having to copy the media itself.

2. (Option) Rename the clips to help with organizing your material.
3. Transfer the media to dedicated storage: select the clips you want and import the media for them by selecting File > Import P2 > Media.

   The media imports to the destination you set in the Media Creation dialog box.

4. Remove the P2 card or drive.

The following topics provide more information on these steps.

Installing the Panasonic P2 Drivers

Before you can use Panasonic P2 equipment, you need to load the appropriate drivers. These drivers are included on a CD that is packaged with your Panasonic P2 equipment.

To install Panasonic P2 drivers:

- Follow the instructions included with your P2 equipment.

Preparing to Mount P2 Cards as Drives

You can mount P2 cards as drives on your desktop and use the files without importing them or capturing them through the Capture tool. To your Avid editing application, these mounted cards function as individual media drives.

P2 cards can function as media drives even though the MXF files are not contained in an Avid MediaFiles folder.

After installing the appropriate Panasonic driver, you can mount the cards as drives from any of these devices:

- PCMCIA card slot: Notebook computers typically include a PCMCIA card slot that will accept individual P2 cards.
- P2 drive: Panasonic offers P2 card-reading peripherals such as the AJ-PCD10 memory card drive. You can connect this drive, or *card reader* through a USB port, or you can install it as an internal drive on a desktop PC. This card reader provides access to five P2 cards at one time.
- P2 camera or deck: Panasonic cameras and decks, such as the AJ-SPD850, provide access to P2 cards through a USB port.

Before mounting P2 cards as drives on a Macintosh system, you need to set write-protection on the cards.

To set write-protection for P2 cards (Macintosh only):

- Slide the switch on a card to the write-protected position, so that an orange tab is showing.

Before using a P2 card reader with a Windows system, you need to set Autoplay options.

To set up a P2 card reader for the first time (Windows only):

1. Make sure your Avid editing application is not running.
2. Make sure the appropriate driver is installed. See "Installing the Panasonic P2 Drivers" on page 256.
3. Connect the card reader to a USB port.
4. Insert a P2 card into each slot.

   Each P2 card is displayed as a single lettered drive on the Windows desktop.
5. Open the Windows Explorer, right-click a drive letter, and select Autoplay from the menu.
6. In the Autoplay dialog box, select "Take no action" and then "Always do the selected action."
7. Repeat the last two steps for each drive letter associated with the reader.

Mounting P2 Cards as Drives

If you don't have enough cards to fill all the slots, you can reuse a card in multiple slots to perform the following drive letter setup.

To mount one or more P2 cards as drives:

1. Make sure your Avid editing application is not running.
2. Make sure the appropriate driver is installed. See "Installing the Panasonic P2 Drivers" on page 256.
3. Connect the card reader, camera, or deck to a USB port.
4. Set write-protection on P2 cards (Macintosh) or set up the P2 card reader (Windows). See "Preparing to Mount P2 Cards as Drives" on page 256.
5. Insert one or more P2 cards (up to five).

   On the Windows desktop, each P2 card is displayed as a single lettered drive on the Windows desktop.

   On the Macintosh desktop, each card appears as a single drive with the label "No Name."
6. Start your Avid editing application and open a project.
7. Select File > Mount All to update the list of mounted drives.

(Windows only) Some card slots of the P2 drive might require drive letters that have already been assigned to existing network drives. If your computer does not display all five card slots as drives, reassign the network drives or restart your system.

Copying P2 Files to a FireWire or Network Drive

After you mount the P2 drives, you have the option of copying the P2 media to a FireWire drive or a network drive and then ejecting the card. You might find it convenient to copy several P2 cards to other drives so the cards can be reused quickly. Your editing application supports P2 copies as though they were actual P2 cards.

You can connect a FireWire drive, for example, and store the contents of several P2 cards on it so you can keep using the cards in the camera.

You can work with media on a P2 card or work with media on another drive, but you cannot work with media that is stored in both places simultaneously. To avoid the problem, eject the P2 card after you have copied the P2 files to the other drive.

To copy the P2 cards to another drive:

1. On the drive, set up a folder for each P2 card you want to copy.
2. Give each folder a unique name that identifies the P2 card; the name does not have to be the same as the actual P2 card name.
3. Navigate to the actual P2 card and select the Contents folder.
4. Do one of the following:
   - Copy and paste the Contents folder to the folder on the other drive.
   - Click the Contents folder and drag it to the folder on the other drive.
5. Eject the P2 card.

Copying P2 Files to a Local Media Drive

After you mount the drives, you have the additional option of copying the media to a local media drive and then ejecting the card.

You can work with media on a P2 card or work with media on local storage, but you cannot work with media that is stored in both places simultaneously. To avoid the problem, eject the P2 card after you have copied the P2 media files to a local media drive.

To copy media to a local media drive:

1. Mount the P2 cards as drives. See "Mounting P2 Cards as Drives" on page 258.
2. On the desktop, navigate to the Video folder on the P2 drive.
3. Select the media files you want to copy.
4. Copy the files to the following folder on the local media drive:

   drive:\Avid MediaFiles\MXF\1

Avid recommends that you use the Copy function to copy files from the P2 drive. Do not use the Move function. On some systems you might have a problem deleting the files that you have moved.

5. Repeat the process for files in the Audio folder.

   Use the same folder for both video and audio media.
6. When you are finished transferring the files, eject the P2 card.

   If you want to delete files on the P2 card, see "Deleting P2 Clips" on page 268.

Changing P2 Cards in the Card Reader

You can change (“hot-swap”) cards while you are working in your Avid editing application.

To change one or more cards in the P2 card reader:

1. Select File > Unmount.
2. Click the All button, then click the Unmount button.
3. Remove the old card or cards and insert the new ones.
4. Select File > Mount All.

Importing P2 Clips and Media Directly from a P2 Card or a Copy of a P2 Card

P2 media files include information (metadata) that lets them appear as master clips in an Avid editing application session. You can import the P2 clips directly from a P2 card or a copy of a P2 card on another drive into a bin in your editing application. You can also import the media associated with the clips if you want to reuse the P2 card, for example, if you want to capture additional material onto the card in a camera. For more information about copying P2 cards to another drive, see “Copying P2 Files to a FireWire or Network Drive” on page 258.

To import P2 clips directly from a P2 card or a copy of a P2 card on any accessible drive:

1. Open the bin into which you want to import the master clips and make sure it is the active window.
2. Select File > Import P2 > Clips to Bin.

   The Browse for Folder dialog box opens.
3. Navigate to the P2 volume:
   - Navigate to the actual P2 card.
   - If you copied the card to another drive, navigate to that drive and then to the folder that contains the Contents folder.

Do not navigate into the Contents folder or into other folders in the volume. The editing application navigates into the folders for you.

The Import P2 option imports all the clips on the card. To import only selected clips, see “Dragging P2 Master Clips from the Media Tool to a Bin” on page 261.

4. Click OK.

   A progress box appears as the clips import. When the import is complete, the clips appear in the active bin. You can play and edit the clips; the media resides on the P2 card. If you leave the application and then restart it, you see the clips in the bin, but the media is offline. You need to import the clips again to continue working with them.

To import media from a P2 card:

1. Open the bin into which you want to import the clips and make sure it is the active window.
2. Select the objects for which you want to import media. You can select master clips, sequences, or a combination.
3. Select File > Import P2 > Media.
4. Follow steps 3 and 4 in the preceding procedure.

   The editing application imports the media to your system according to your Media Creation settings.

Dragging P2 Master Clips from the Media Tool to a Bin

You can also drag P2 master clips from the Media tool to a bin. You can select particular clips to bring into the bin.

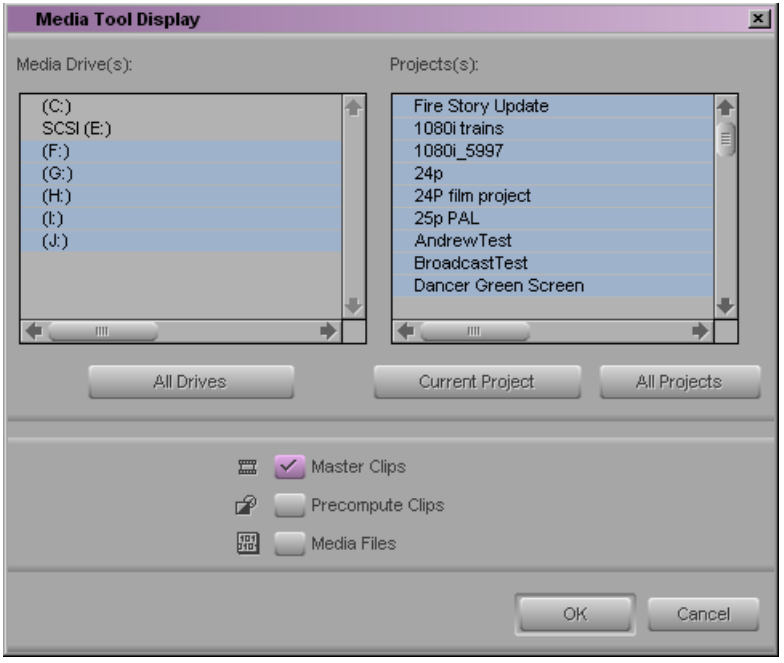
To drag P2 master clips from the Media tool to a bin:

1. Create a project or open an existing project.
2. Create one or more bins.

3. Select Tools > Media Tool.

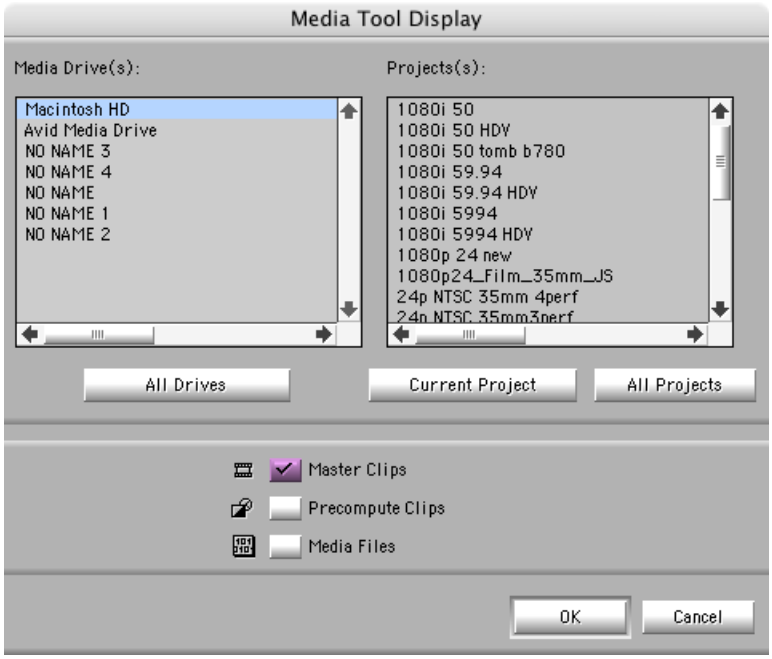
   The Media Tool Display dialog box opens.

Windows



On Macintosh systems, drives are identified individually as NO NAME, NO NAME 1, and so on.

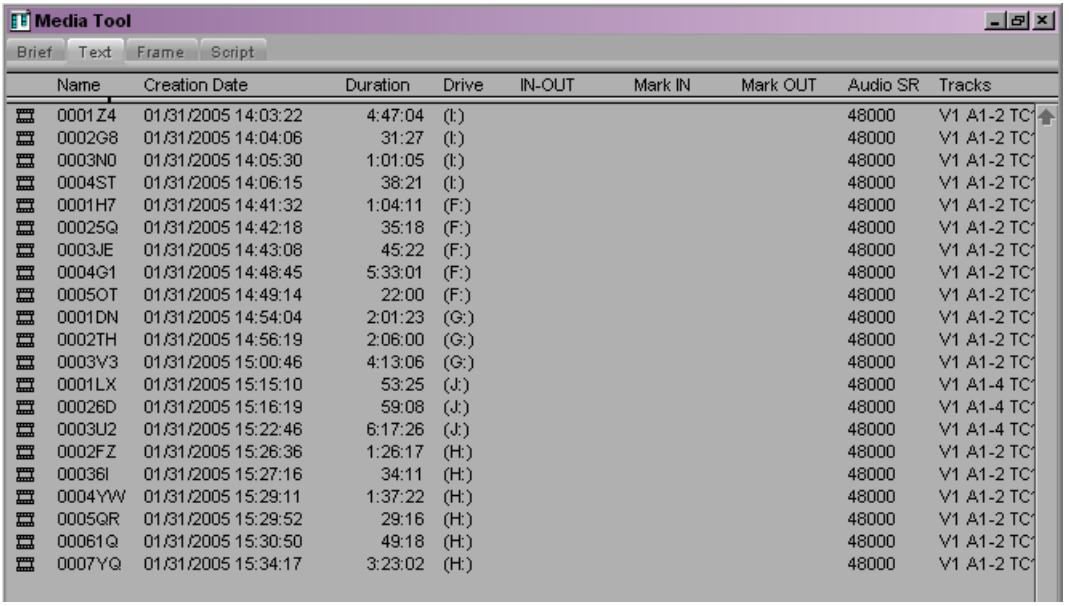
Macintosh



4. Select the following options:
   a. In the Media Drives list, select one or more P2 drives.
   b. Click the Current Project button.
   c. Select Master Clips, deselect Precompute Clips, and deselect Media Files.

5. Click OK.

   The Media tool displays the clips contained on the drives you selected.



Name	Creation Date	Duration	Drive	IN-OUT	Mark IN	Mark OUT	Audio SR	Tracks
0001Z4	01/31/2005 14:03:22	4:47:04	(I:)				48000	V1 A1-2 TC
0002G8	01/31/2005 14:04:06	31:27	(I:)				48000	V1 A1-2 TC
0003N0	01/31/2005 14:05:30	1:01:05	(I:)				48000	V1 A1-2 TC
0004ST	01/31/2005 14:06:15	38:21	(I:)				48000	V1 A1-2 TC
0001H7	01/31/2005 14:41:32	1:04:11	(F:)				48000	V1 A1-2 TC
00025Q	01/31/2005 14:42:18	35:18	(F:)				48000	V1 A1-2 TC
0003JE	01/31/2005 14:43:08	45:22	(F:)				48000	V1 A1-2 TC
0004G1	01/31/2005 14:48:45	5:33:01	(F:)				48000	V1 A1-2 TC
0005OT	01/31/2005 14:49:14	22:00	(F:)				48000	V1 A1-2 TC
0001DN	01/31/2005 14:54:04	2:01:23	(G:)				48000	V1 A1-2 TC
0002TH	01/31/2005 14:56:19	2:06:00	(G:)				48000	V1 A1-2 TC
0003V3	01/31/2005 15:00:46	4:13:06	(G:)				48000	V1 A1-2 TC
0001LX	01/31/2005 15:15:10	53:25	(J:)				48000	V1 A1-4 TC
00026D	01/31/2005 15:16:19	59:08	(J:)				48000	V1 A1-4 TC
0003U2	01/31/2005 15:22:46	6:17:26	(J:)				48000	V1 A1-4 TC
0002FZ	01/31/2005 15:26:36	1:26:17	(H:)				48000	V1 A1-2 TC
00036I	01/31/2005 15:27:16	34:11	(H:)				48000	V1 A1-2 TC
0004YW	01/31/2005 15:29:11	1:37:22	(H:)				48000	V1 A1-2 TC
0005QR	01/31/2005 15:29:52	29:16	(H:)				48000	V1 A1-2 TC
00061Q	01/31/2005 15:30:50	49:18	(H:)				48000	V1 A1-2 TC
0007YQ	01/31/2005 15:34:17	3:23:02	(H:)				48000	V1 A1-2 TC

If you do not see any media clips, update the mounted drives and media database again by selecting File > Mount All and File > Refresh Media Directories. You might also need to restart the application.

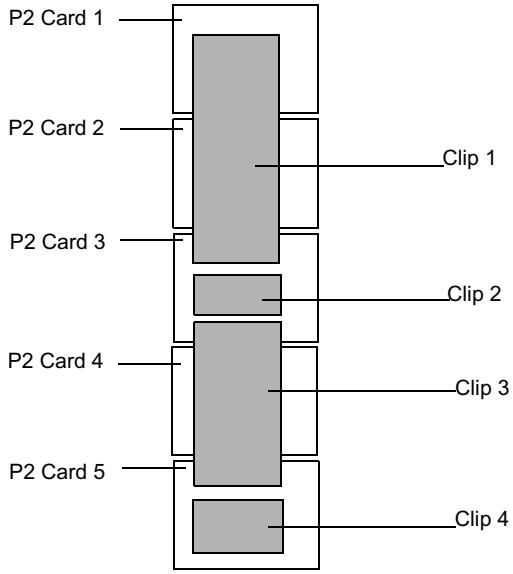
6. Select the clips you want to use.
7. Drag them into an appropriate bin.

You can now use the master clips in your project.

Working with Spanned Clips

Spanned clips are clips that extend from one P2 card to another. You can work with spanned clips in your Avid editing application.

The following illustration shows how clips can span multiple P2 cards.



When you are working with spanned clips, consider the following:

- If you remove a card that contains a spanned clip, for example Card 2 in the above example, and you try to play Clip 1, it plays until it reaches the portion of the clip that resides on Card 2. The Media Offline slide appears until you reach the media on Card 3. Avid recommends that you do not place another card in the removed card's place unless you remove all the cards that contain the spanned clip (P1 and P3 in this example).
- Cards containing spanned and unspanned master clips can be mixed. However, if a card containing a chunk of a spanned clip is ejected and another card is inserted, the master clips in the newly inserted card are not visible in the Media Tool but the media files are visible. You can work around this by removing all the cards containing chunks of the spanned clip and performing a File > Unmount followed by a File > Mount All. All the master clips will be visible.

- P2-spanned media covers multiple drives, but the bin displays only one drive letter. The drive letter in the bin might be any of the drives, but is usually the highest lettered drive where the media exists.
- If necessary, copy all spanned clips to another drive to ensure a clip's integrity before swapping out the P2 cards.

Sharing P2 Clips and Sequences

If you are working in an Avid Unity workgroup environment, you can share sequences that contain P2 clips in an Avid Unity workspace. However, you can share P2 clips only if you transcode or consolidate them to a workspace.

- In an MXF workgroup, you can either consolidate or transcode P2 clips to a workspace. If you transcode, you must transcode P2 MXF files to another MXF resolution.
- In an OMF workgroup, you must transcode P2 clips to a workspace. You must transcode P2 MXF files to OMF files.

Consolidating or transcoding clips to an Avid Unity workspace automatically checks all related metadata into the asset manager, making the clips readily accessible to other users.

For more information on workgroup support, see the Avid Interplay Help.

Some card slots of the P2 drive might require drive letters that have already been assigned to existing network drives. If your computer does not display all five card slots as drives, reassign the network drives or restart your system.

Exporting Your Clip or Sequence to a P2 Card

If you have a P2 card writer, you can export a clip or sequence to your P2 card. The writer can be a P2 device or a camera enabled for P2 writing. You can export to one card or to more than one.

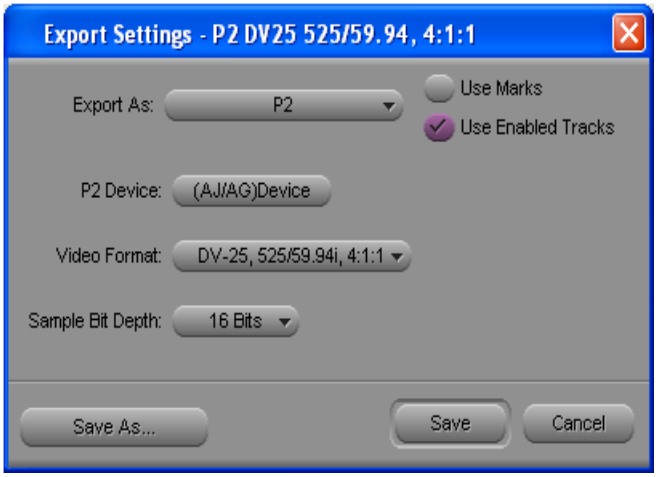
To export a a clip or a sequence to a P2 card:

1. Make sure your system is connected to a writable P2 device.

If you are connected to more than one P2 device, make sure only one is turned on. If more than one device is turned on, you cannot control which device you export to.

2. Select the clip or the sequence in the bin.
3. Select Output > Export to Device > P2.

   The P2 Export Settings dialog box opens.



4. Select options as described in "P2 Export Settings" on page 686.

If you are not connected to a P2 device or camera, the options are not available.

5. (Option) If you are connected to a P2 device and it does not appear in the P2 Device list, select File > Mount All to update the list of mounted drives.
6. Click Save.

   A progress window opens, and the orange light on the P2 card flashes indicating that the card is being written to. If you have more than one card in the device, the application writes to the first one in the list. If your sequence is larger than the space available on that card, the application fills the first card and then writes to the next card.

Deleting P2 Clips

When you are working in your Avid editing application, you can delete P2 master clips, but you cannot delete media files that reside on P2 drives. Your Avid application treats P2 files as read-only devices.

To delete files from a P2 drive:

1. Quit your Avid editing application.
2. Make sure the write-protect switch on the P2 card is set to allow writing.
3. On the desktop, navigate to the P2 drive.
4. Select the files you want to delete and press the Delete key.

You can also delete files or reformat the card by using the Panasonic P2 Viewer, which is available as a free download from Panasonic.

In your Avid editing application, you can delete P2 master clips and media files the same way you delete other master clips and media files. However, you might not be able to delete P2 files that you moved rather than copied. If you cannot delete P2 master clips and media files, first unlock the clips, as described in the following procedure, and then delete them.

To delete P2 files on a local drive when working in the Avid editing application:

1. In a bin, select the clips you want to delete.
2. (Option) Right-click and select Unlock Bin Selection.
3. Press the Delete key.

   The Delete dialog box opens.
4. Select Delete master clips and Delete associated media files.
5. Click OK.

Finding a Related Media File

The Reveal File command allows you to select a clip in a bin and automatically open its related media file. This command is useful if you want to delete, move, or label the media file.

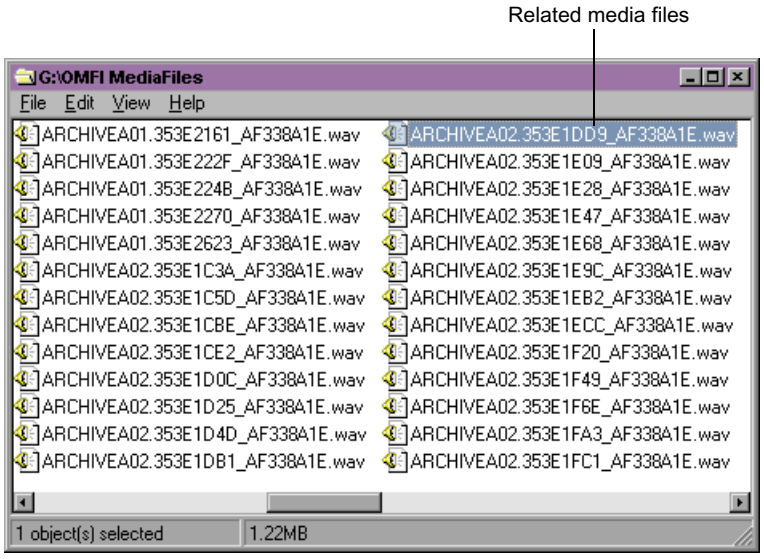
To find a related media file:

1. Select the clip in a bin for which you want to find the media file.

   The clip is highlighted.

2. Select File > Reveal File.

   The system searches all available drives, opens Windows Explorer or the folder (Macintosh), and highlights related media files.



(Windows only) If more than one file is related to the clip, a message box asks if you want to see the next file. If you click OK, you need to bring the Explorer window forward by pressing and holding the Alt key while pressing the Tab key until you select the OMFI MediaFiles folder or the Avid MediaFiles folder.

Relinking Media Files

Sometimes, after you consolidate or move material between systems, the clips or sequences lose their links to the original media files. When a clip becomes unlinked, it displays the message “Media Offline.” If appropriate media exists online, you can use the Relink command to reestablish the link.

In an Avid Interplay environment, relinking through the Relink dialog box is limited to non-master clips (subclips and sequences). For more information, see “Using the Relink Dialog Box in an Avid Interplay Environment” in the Help.

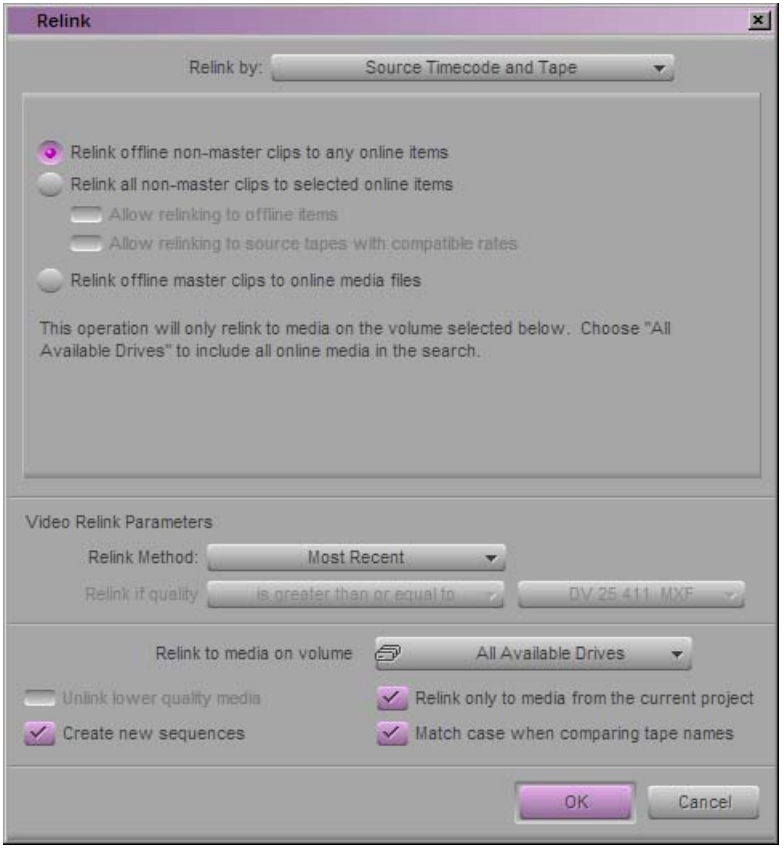
When you select subclips or sequences and select the Relink command, the system searches for master clips that contain the same material included in the selection.

You can also relink master clips to appropriate media files or to source tapes with compatible rates, and you can relink based on resolution. The system compares information such as source tape name, timecode information, and channels captured. If the search is successful, the system establishes new links to the available media files. You can instruct the system to search specific drives or all available drives.

To relink master clips, subclips, or sequences:

1. Select the unlinked object or objects in the bin.
2. Select Clip > Relink.

   The Relink dialog box opens.


Relink
Relink by:
Source Timecode and Tape
Relink offline non-master clips to any online items
Relink all non-master clips to selected online items
Allow relinking to offline items
Allow relinking to source tapes with compatible rates
Relink offline master clips to online media files
This operation will only relink to media on the volume selected below. Choose "All Available Drives" to include all online media in the search.
Video Relink Parameters
Relink Method:
Most Recent
Relink if quality
is greater than or equal to
DV 25 411 MXF
Relink to media on volume
All Available Drives
Unlink lower quality media
Relink only to media from the current project
Create new sequences
Match case when comparing tape names
OK
Cancel

3. Select options as described in "Relink Options" on page 271.

   You can display Help for the dialog box by pressing F1 (Windows) or the Help key (Macintosh).

4. Click OK.

   The system searches the selected media drives, and relinks clips and sequences if possible.

The system disregards audio sample rate when matching media files.

To maintain the original capture settings for a subclip or sequence, use the Batch Capture command; do not use the Relink command.

Relink Options

The following table describes the options for the Relink dialog box.

Relink Dialog Box Options

Option	Suboption	Description
Relink by		• Source Timecode and Tape • Key Number (KN Start) - picture only
Relink offline non-master clips to any online items		Relinks subclips and sequences to the master clips that contain the same material.
Relink all non-master clips to selected online items		Relinks related subclips or sequences to the highlighted clip in the bin. When you select this option, the suboptions are available.
	Allow relinking to offline items	Relinks to clips that are offline. When you select "Allow relinking to offline items," all available drives are searched regardless of the setting for "Relink to media on volume."
	Allow relinking to source tapes with compatible rates	Relinks SD clips to HD clips within an HD project or relinks HD clips to SD clips within an SD project. See "Relinking Clips to a New Project Format" on page 273.
Relink offline master clips to online media files		Relinks master clips to media files that share similar database information.

Relink Dialog Box Options (Continued)

Option	Suboption	Description
Video Relink Parameters		
Relink Method		• **Most Recent:** Relinks to the most recently created clip. This option is selected by default. • **Highest Quality:** Relinks to the highest quality clip; for online work. • **Most Compressed:** Relinks to the most compressed clip; for offline work. • **Specific Resolution:** Relinks to clips of a specific resolution
Relink if quality		If you select Specific Resolution as a relink method, this menu allows you to select one of three options. See "Relinking by Resolution" on page 274.
Relink to Media on Volume		• **All Available Drives:** Searches across all media drives that are online • **A specific drive volume:** Relinks to media on a specific media drive
Unlink		If you select Specific Resolution as a relink method, this option changes based on your choice in the "Relink if quality" menu. See "Relinking by Resolution" on page 274.
Create new sequences		Leaves existing sequences alone and relinks only to copies with **.relinked** appended to their names. This option is selected by default.
Relink only to media from the current project		Restricts relinking to the current project.
Match case when comparing tape names		Makes tape name search case sensitive.

Relinking Clips to a New Project Format

You can use the Relink command to connect clips or sequences created in one project format to clips created in a new project format. This is helpful when you are offline editing in a standard-definition (SD) project and conforming the project in a high-definition (HD) project.

For example, you are editing a sequence in an NTSC 24p sequence. You then change the project format to 1080p/24, see “Changing the Project Format” on page 830, and modify the sequence. See “Modifying the Format of a Sequence” on page 832. A new sequence is created with the master clips appearing offline. If the HD media is already captured (as in a shared storage environment), you can use the command “Allow relinking to source tapes with compatible rates,” to link to the HD media.

You can also use this command to link to clips logged without media. Then you can batch capture the final HD media.

The following table gives project formats that have compatible rates:

SD project format	HD project format
NTSC 23.976p	720p/23.976 1080p/23.976
NTSC 24p	1080p/24p
PAL 24p	1080p/24
PAL 25p	1080p/25
PAL 25i	1080i/50
NTSC 30i	1080i/59.94 720p/59.94

You cannot relink clips if the project format does not match the clip format. For example, if you have unlinked SD clips in an HD project and try to relink the SD clips, nothing happens. You need to switch the project format to a compatible HD format in the Format tab of the Project window. The same holds true for unlinked HD clips in an SD project.

To relink selected master clips and subclips to a new project format:

1. Select the clips and sequence targeted for relinking.
2. Select Clip > Relink.

   The Relink dialog box opens.
3. Select "Relink all non-master clips to selected online items" to relink related subclips or sequences to the highlighted clip in the bin.
4. Select "Allow relinking to source tapes with compatible rates."
5. Click OK.

   In an HD project, the SD clips in your sequence are now linked to HD media.

   In an SD project, the HD clips in the your sequence are now linked to SD media.

Relinking by Resolution

You can relink to clips of a specific resolution.

In an Avid Interplay environment, you can use dynamic relinking to easily switch between resolutions. For more information, see "Using MultiRez and Dynamic Relinking" in the Help.

To relink a clip by resolution:

1. Select the unlinked object or objects in the bin.
2. Select Clip > Relink.

   The Relink dialog box opens.
3. Select Relink Method > Specific Resolution.
4. Select an option from the "Relink if quality" menu, as described in the following table.

   When you select an option from the "Relink if quality" menu, the text of the Unlink button changes, as shown in the following table. The button is selected by default.

"Relink if quality" Menu option	Dependent option
Is greater than or equal to *resolution*	Unlink lower quality media
Is equal to *resolution*	Unlink media that is not *resolution*
Is less than or equal to *resolution*	Unlink higher quality media

5. Select the Unlink option.

   If you are working in an offline resolution and want to capture in a higher resolution, select Unlink to ensure that you recapture all the media at the higher resolution. You can check for offline media in the Timeline by selecting Timeline Fast menu > Clip Color > Offline, which displays offline clips in red.

6. Select a resolution from the Resolution menu.

   The default resolution is determined by the current Media Creation setting for Capture. See "Media Creation Settings" on page 709. If you select a different resolution in the Relink dialog box, the Media Creation setting does not change.

7. Select other Relink options as described in "Relinking Media Files" on page 269.

8. Click OK.

   The system searches the selected media drives, and relinks clips and sequences if possible.

Relinking to Selected Clips

You can also use the Relink command for connecting subclips or sequences to selected master clips and subclips.

To relink to selected master clips and subclips:

1. Move the subclips or sequences that you want to relink into the bin containing the clips.
2. Select the clips targeted for relinking.
3. Select Clip > Relink.

   The Relink dialog box opens.

4. Select "Relink all non-master clips to selected online items" to relink related subclips or sequences to the highlighted clip in the bin.
5. Click the "Relink to media on volume" menu, and select an option:
   - Select All Available Drives to search across all media drives that are online.
   - Select a specific drive volume if you know the location of the media or if you want to relink to media on a specific media drive.
6. (Option) Select "Relink only to media from the current project."
7. (Option) Select "Match case when comparing tape names."
8. Click OK.

   The subclips or sequences are linked to the selected clips or subclips.

Relinking Consolidated Clips

If the appropriate media exists online, you can reconnect consolidated clips, subclips, or sequences to the new or old media files.

For example, if you consolidated a sequence and forgot to create a duplicate, and later decide to use the original media files instead of the consolidated media files, you can break the new link and reestablish the old link to the original files.

Because subclips and sequences do not point directly to the media files, you can perform this procedure only by using the source master clips.

To relink consolidated subclips or sequences:

1. Select the new master clips for a consolidated subclip or sequence (the clips have the file name extension *.new*), and unlink them. For information on unlinking, see "Unlinking Media Files" on page 277.
2. Select Clip > Relink.

   The Relink dialog box opens.
3. Select "Relink offline master clips to online media files" to relink master clips to media files that share similar database information.
4. Click the "Relink to media on volume" menu, and select a specific drive volume that contains the original media files.
5. (Option) Select "Relink only to media from the current project."
6. (Option) Select "Match case when comparing tape names."
7. Click OK.

   The clips are relinked to the original media files.

Relinking Moved Projects

If you move projects between systems with similar media existing at each site but captured separately, your clips and sequences display the message "Media Offline." You can use the Unlink and Relink commands to reconnect the files at either site.

For example, if you have a project that requires sharing work between two different sites, you can capture the source material once at each site and exchange only the project folder at each stage, rather than move large media drives back and forth. The project folder can be exchanged on floppy disks or instantly across a network. Because the media files maintain slightly different parameters at each site, you must relink the material each time.

Unlinking Media Files

You can use the Ctrl and Shift keys to modify the Relink command for unlinking clips from their media files.

To unlink master clips from their current links:

1. Select the master clips to unlink.
2. Ctrl+Shift+right-click the clips.
3. Select Unlink.

   The clips are unlinked and display the message Media Offline.

Because subclips and sequences do not point directly to the media files, you can perform this procedure only by using the source master clips.

If you have similar material from different sources, you can duplicate a set of clips, unlink the duplicates, and then modify the sources of the duplicates before capturing the new source material.

For example, if you are working with multicamera material, you can capture one reel, duplicate the clips several times, unlink the duplicated clips, and rename their source tapes to batch capture the remaining reels.

Using Videotapes for Archiving and Restoring Media Files

You can archive to videotape the source media associated with sequences, master clips, subclips, and group clips. Archiving the source media to videotape is similar to recording a digital cut, except that you can reedit the sequence after you restore it.

The archive to videotape process is not available with progressive media projects.

You can use the archiving process to:

- Archive completed projects that you can restore at a later date if you need to reedit the project.
- Provide more space on the media drives for a new project.
- Create backups of your project files.
- Move a project to another workstation.

When you archive a project, the source media files are archived to videotape, and then you save the project files. For information about saving the project files, see “Backing Up Your Project Information” in the Help. You can reconstruct your project with the archived files and your source tapes.

The media files experience generation loss when the media is archived and restored because the target videotape format might include some compression.

The archiving process divides the archive into multiple archive sequences based on the lengths of the available videotapes. The archiving to videotape process adds handles to the new clips that allow you to reedit the sequence after you restore the media files from the videotape.

During the archiving process, the original media is archived to videotape. Media with effects is not recorded to tape because you can easily re-create the effects after the project is recaptured. However, the handles for transition effects are included in the archive file. The final sequence can be linked to the recaptured media to recreate the project.

Each archived master clip is stamped with the archive tape name and archive timecodes during the restore process. The original source information on the master clips remains unchanged.

Archiving Media Files

Before archiving your media files to videotape, you must stripe the record tapes (record black and timecode for approximately 15 seconds after the bars and tone on the tape). For information about preparing record tapes, see “Preparing Record Tapes” in the Help.

To archive a video project’s media files:

1. Set up the Digital Cut tool as follows:
   a. Select Output > Digital Cut.

      The Digital Cut tool opens.

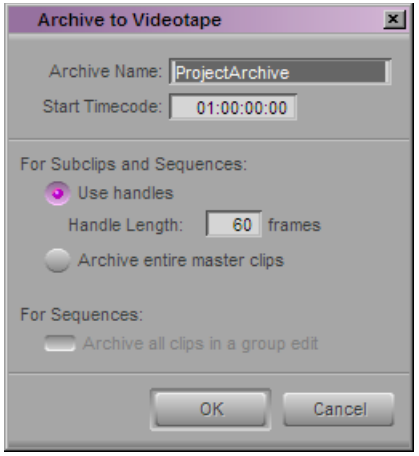
   b. Click the Deck Selection menu, and select a deck.

   c. If the Select Tape dialog box opens, click Cancel to leave Tape Name unspecified.

   d. (Option) Select the Custom Preroll option, and select the number of seconds to indicate how many seconds the tape will roll before the archiving process starts. This option overrides the Preroll setting in the Deck Settings dialog box.
2. Create a new bin for the archive, and name the bin. For example, you can name the bin Archive.
3. Duplicate the sequences and clips you want to archive.
4. Drag the appropriate duplicate sequences and clips to the Archive bin.
5. Select the clips and sequences to archive from the Archive bin by doing one of the following:
   - Select Edit > Select All to select all the clips and sequences in the bin.
   - Ctrl+click (Windows) or Shift+click (Macintosh) to select specific clips or sequences.

6. Select Clip > Archive to Videotape.

   The Archive to Videotape dialog box opens.



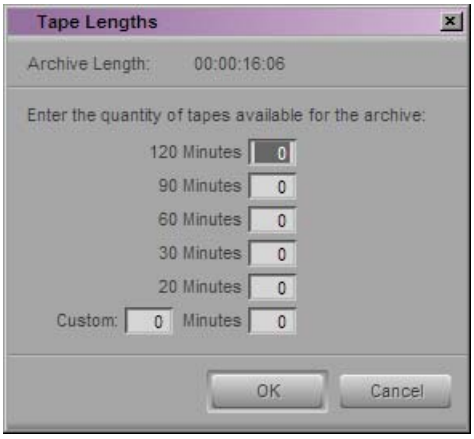
7. Select the appropriate options.

   "Archive to Videotape Options" on page 281 describes the options listed in the Archive to Videotape dialog box. You can display Help for the dialog box by pressing F1 (Windows) or the Help key (Macintosh).

If the clips or sequences that you want to archive are not highlighted in the active bin, Archive to Videotape appears dimmed in the Clip menu.

8. Click OK.

   The Tape Lengths dialog box opens.



The Archive Length area displays the calculated length of time required for archiving the media files. The archiving process might require more time than indicated because individual clips are not divided between tapes.

9. Under the "Enter the quantity of tapes available for the archive" area, do one of the following:
   - Type the number of blank videotapes needed for the archive next to the length of time of your blank tapes.

     For example, if the archive length is 2 hours and 15 minutes, and you have 30-minute videotapes, you would type 5 in the 30 Minutes text box.
   - Type a custom tape length in the Custom text box, and type the number of available blank videotapes.

The archiving process uses the tapes in the order listed in the Tape Lengths dialog box. For example, if you type 10 in the 120 Minutes text box and 5 in the 60 Minutes text box, when you start the archive your Avid editing application prompts you for each of the ten 120-minute tapes before using the five 60-minute tapes.

10. Click OK.

    The Digital Cut tool opens and becomes the active window.
11. Follow the instructions displayed in the message boxes to complete the archiving process.

    A set of archive sequences is created in the Archive bin, and the source media is output to the videotape. One archive sequence is created for each tape. When needed, the system prompts you for another blank tape. The tapes are requested in the order that they appear in the Tape Lengths dialog box.

    When the system finishes creating the archive, a message box notifies you that the process is complete.
12. Copy the project files (bins, project, and settings) to a storage device. For more information, see "Backing Up Your Project Information" in the Help.

After archiving your project, you can delete the media files from your Avid system to provide more space on your media drives.

Archive to Videotape Options

The Archive to Videotape dialog box allows you to optimize the archiving of media files for the selected sequences and clips.

To access the Archive to Videotape dialog box:

- Select Clip > Archive to Videotape.

The following table describes the Archive to Videotape options.

Archive to Videotape Options

Option	Description
Archive Name	Type a name for the archive in the Archive Name text box. ProjectArchive is the default name. The archive name is numbered incrementally beginning with *001* to indicate the order of the tapes.
Start Timecode	Type a value in the Start Timecode text box to set the starting timecode of the archive on the videotape. By default, the start timecode is set to 01:00:00:00.
For Subclips and Sequences:	
Use handles	Select this option, and in the Handle Length text box type the number of additional frames you want to archive at the heads and tails of the new master clips. This option provides enough overlap for trimming and adding transition effects.
Archive entire master clips	Select this option if you want to archive entire master clips.
For Sequences:	
Archive all clips in a group edit	Select this option if you selected a sequence that contains group clips and you want to archive the media for all the clips in the group.

Restoring an Archive from Videotape

Restoring an archive from videotape is similar to performing a batch capture. The archiving process creates new master clips for sequences. During the restore process, each archived master clip is stamped with the archive tape name and archive timecodes. The original source information on the master clips remains unchanged.

After restoring an archive, any links to the original master clips are broken, and only the sequence and its new master clips are linked to the newly captured media files.

To restore an archive from videotape:

1. Copy the project files to the Avid Projects folder.

   For information about the location of the Avid Projects folder, see “Managing the Avid Projects and Avid Users Folders” in the Help.

2. Open the project in your Avid editing application.
3. Open the archived bin.

4. Select Tools > Capture, and set the following options in the Capture tool:
   a. Click the Deck Selection menu, and select a deck.
   b. If the Select Tape dialog box opens, click Cancel to leave Tape Name unspecified.
   c. Click the Res (Resolution) menu, and select a resolution.
   d. Click the Target Drive menu, and select a drive volume.
   e. Make sure the audio sample rate is set correctly. See "Selecting the Audio Sample Rate" in the Help.

For more information about setting up the Capture tool, see "Setting Up the Capture Tool" in the Help.

5. Select the archived sequences, original sequences, and original clips.

If you select only the archived sequences, the media is restored during the restore process, but the new media is not relinked to your original clips. To relink the new media to the original clips, select the original clips and repeat the restore process. Repeating the restore process relinks only the selected items to the new media files.

6. Select Clip > Restore from Videotape.

   The Restore from Videotape dialog box opens.

7. (Option) If you are repeating the restore process, select "Restore only those items for which media is currently unavailable." Otherwise, deselect this option.
8. Click OK.

   The Capture tool becomes the active window.

9. Follow the instructions displayed in the message boxes to complete the restore process.

   Your Avid editing application recaptures the archived sequences and clips, and relinks the selected clips and sequences to the new master clips.

10. Batch import any graphics and render all non-real-time effects. For information about batch import, see "Reimporting Files" in the Help.

Chapter 8
Script-Based Editing

The lined script is traditionally used as a tool for managing scene and take information during postproduction on a dramatic feature film or television production. The script-based editing feature in your Avid editing application allows you to adapt the lined script to the digital realm for use in any type of production, from drama to documentary to spot advertising.

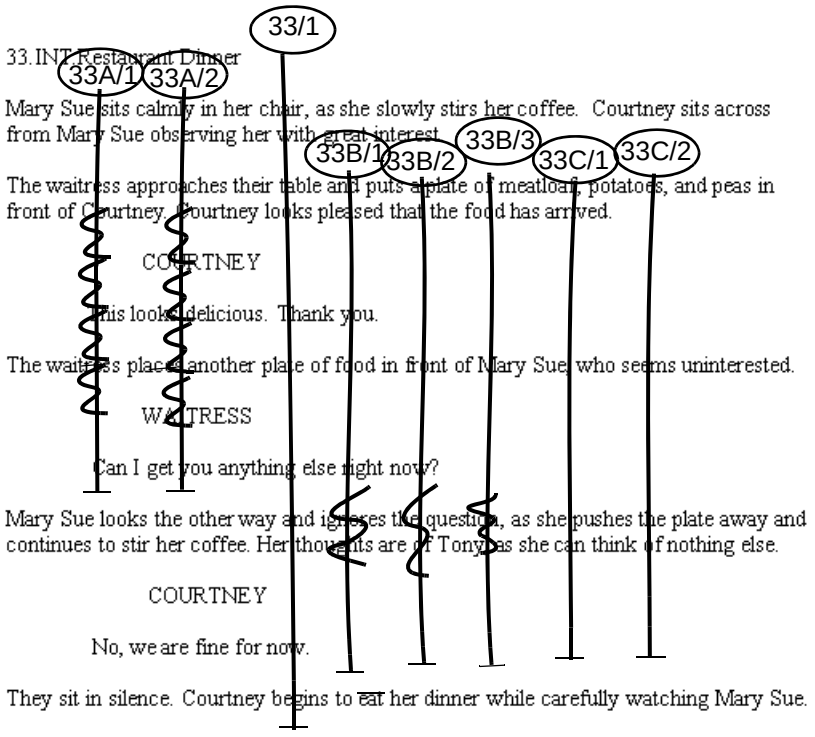
The following topics provide information about working with script-based editing:

- Lined Script Basics
- Script Window Basics
- Manipulating Script Text
- Searching Through Script
- Linking Clips to the Script
- Interpolating Position for Script Integration
- Manipulating Slates
- Manipulating Takes
- Using Script Marks
- Finding Clips and Script
- Editing with the Script Window

Lined Script Basics

The conventional lined script — which evolved during decades of trial and error in Hollywood — provides assistant editors and chief editors with a road map that helps them find the coverage they need to edit scenes in a film or television show.

Traditionally, the continuity person creates the lined script on the set at the time of shooting. All notes are handwritten. The following is an example of a scene from a lined script:


33/1
33. INT. Restaurant Dinner
33A/1
33A/2
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
33B/1
33B/2
33B/3
33C/1
33C/2
The waitress approaches their table and puts a plate of meatloaf, potatoes, and peas in front of Courtney. Courtney looks pleased that the food has arrived.
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
WAITRESS
Can I get you anything else right now?
Mary Sue looks the other way and ignores the question, as she pushes the plate away and continues to stir her coffee. Her thoughts are of Tony, as she can think of nothing else.
COURTNEY
No, we are fine for now.
They sit in silence. Courtney begins to eat her dinner while carefully watching Mary Sue.

Explanation of Symbols

Each vertical line drawn through the scene represents a single take from the moment the director says “Action” to the moment the director says “Cut.” Each scene might require several camera angles and positions, with one or more takes, all of which are lined and identified alphanumerically.

The following is a brief summary of the lining techniques and numbering system shown in the example in “Lined Script Basics” on page 286:

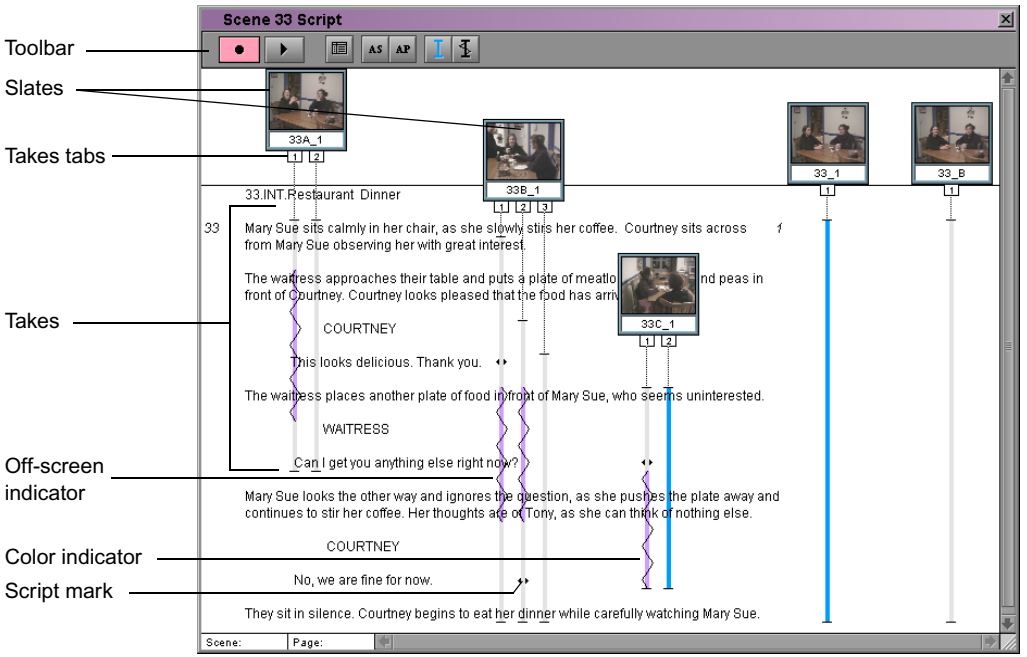
- **Master shot:** The line labeled 33/1 is the master shot that usually covers all the action in a wide shot. The first number in the label indicates the scene number as written on the script (scene 33). The number following the slash indicates that this is the first take captured on film for the master shot. A second take of the master shot, for example, would be labeled 33/2.
- **Additional setups:** The lines for each subsequent camera setup within the scene are labeled with the scene number (33 in our example) followed by a letter for each setup (A, B, C, and so forth), followed by a slash and the number of the take within that setup. These lines can be any length, depending upon what portion of the script is covered by the particular shot.
- **Off-screen dialog:** The jagged lines in the script represent the parts of dialog where the actor is off screen. For example, the character Mary Sue is off camera during the action described in the second paragraph (when the waitress character enters), so a jagged line is drawn through the shots that cover Mary Sue (33A/1 and 2).

When the scene is recorded on videotape — for example, in a sitcom shoot — the lined script can also include timecode notes written next to specific lines of dialog that represent a sync point between the dialog on the page and the recorded dialog on tape. These sync points provide assistant editors or chief editors with a quick path to specific points in the source material.

Lining in the Digital Realm

Script integration in your Avid editing application provides a number of enhancements to this traditional system. These enhancements allow you to shorten dramatically the distance between the concepts captured on the page and the source materials used to assemble a finished program.

Unlike the traditional lining of a script, digital script integration is usually performed after the shoot — for example, by the assistant editor — using the notes of the continuity person. The following is an example of the script shown in "Lined Script Basics" on page 286, prepared and lined using script integration.


Toolbar
Slates
Takes tabs
Takes
Off-screen indicator
Color indicator
Script mark
Scene 33 Script
33A_1
33B_1
33_1
33_B
33C_1
33.INT.Restaurant Dinner
33
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
WAITRESS
Can I get you anything else right now?
Mary Sue looks the other way and ignores the question, as she pushes the plate away and continues to stir her coffee. Her thoughts are of Tony, as she can think of nothing else.
COURTNEY
No, we are fine for now.
They sit in silence. Courtney begins to eat her dinner while carefully watching Mary Sue.
Scene:
Page:

In addition to the standard lining conventions, script integration includes the following enhancements:

- **Slates:** Takes are organized into slates that display a representative frame and clip name for the take that is currently selected.
- **Takes:** The Takes tabs and lines extending from the bottom of each slate indicate the number of takes for that scene. Click a Takes tab to select the take.
- **Indicators:** You can apply off-screen dialog indicators or colors to indicate such things as preferred takes, takes used in the current active sequence, or line changes in dialog.
- **Script marks:** The double arrows marking the takes at various points represent marked lines of dialog in the script that are synchronized to matching dialog in the source clip. Script marks are especially effective during editing, allowing the editor to quickly locate dialog and piece together parts of a scene.

The Script window provides additional controls for matching back to clips in the source bins, loading and playing back takes, and searching for takes and script text.

Script Integration Workflow

The basic workflow for script integration is as follows:

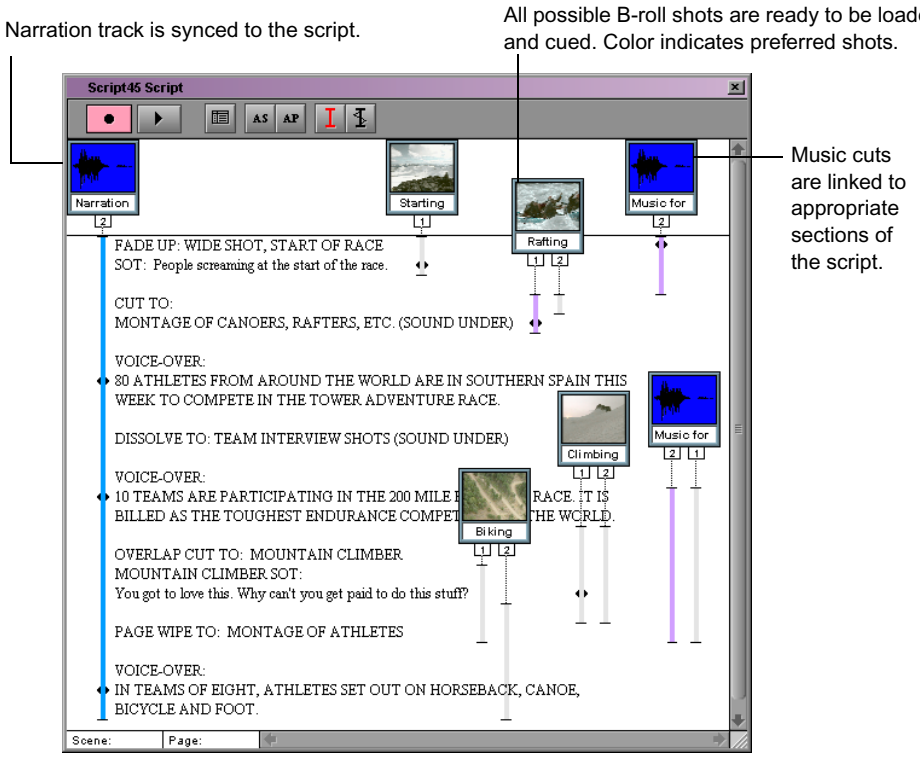
1. The continuity person or an assistant creates the lined script in hardcopy form on the set during shooting.
2. Source footage from the shoot is prepared and captured by using methods described in "Creating a New Project" in the Help.
3. The assistant editor uses the lined script from the shoot, a text file of the script itself, and methods described throughout this chapter to import and line the script, link clips to the script, place script marks, and customize the display of takes prior to editing. The assistant can also use the ScriptSync™ feature to automatically place script marks.
4. The editor uses the fully prepared Script window to edit the program.

Using Script Integration in Video Projects

Script integration is an effective tool for editing any type of production, not just feature films and television drama. For example:

- You can adapt many of the procedures described in this chapter for use in audiovisual scripts for documentaries, corporate spots, news magazine segments, and spot advertisements.
- You can turn script integration into a quick storyboarding tool by positioning selected slates in the Script window and printing storyboard bins that include your script.

The following is an example of an audiovisual script for a news magazine piece imported into the Script window, with the basic features of script integration applied.


Narration track is synced to the script.
All possible B-roll shots are ready to be loaded and cued. Color indicates preferred shots.
Music cuts are linked to appropriate sections of the script.
Script45 Script
AS
AP
Narration
Starting
Rafting
Music for
FADE UP: WIDE SHOT, START OF RACE
SOT: People screaming at the start of the race.
CUT TO:
MONTAGE OF CANOERS, RAFTERS, ETC. (SOUND UNDER)
VOICE-OVER:
80 ATHLETES FROM AROUND THE WORLD ARE IN SOUTHERN SPAIN THIS WEEK TO COMPETE IN THE TOWER ADVENTURE RACE.
DISSOLVE TO: TEAM INTERVIEW SHOTS (SOUND UNDER)
Climbing
Music for
VOICE-OVER:
10 TEAMS ARE PARTICIPATING IN THE 200 MILE
RACE. IT IS
BILLED AS THE TOUGHEST ENDURANCE COMPET
THE WORLD.
Biking
OVERLAP CUT TO: MOUNTAIN CLIMBER
MOUNTAIN CLIMBER SOT:
You got to love this. Why can't you get paid to do this stuff?
PAGE WIPE TO: MONTAGE OF ATHLETES
VOICE-OVER:
IN TEAMS OF EIGHT, ATHLETES SET OUT ON HORSEBACK, CANOE, BICYCLE AND FOOT.
Scene:
Page:

Script Window Basics

This section describes basic procedures for creating and manipulating Script windows, including importing script text; navigating through the script; displaying clip information; opening, closing, and saving windows; and adjusting margins.

Before you begin creating Script windows, make sure you have established the proper defaults in the Script Settings dialog box for font, margin, and display of frames and takes. For information on Script settings, see "Script Settings Options" on page 291. These parameters can also be changed manually.

Script Settings Options

Before you open a script in the Script window, you can select default preferences using the Script Settings dialog box. After the Script window is open, any changes you make in the Script Settings dialog box are ignored by the Script window. You must close the Script window and then reopen it for the new settings to take effect. However, the Script menu provides several commands that allow you to override the Script settings. The Script menu commands are described throughout this chapter.

To open the Script Settings dialog box:

- Double-click Script in the Settings list in the Project window.

See "Script Settings" on page 721 for a list of the Script Settings options.

Importing a Script

The first step in script integration is to import a script in the correct format.

The imported script must be in text format. To maintain the original formatting, however, export the script from your word processor by using the "Text Only with Line Breaks" option. If you export the script as "text" only, the formatting is lost.

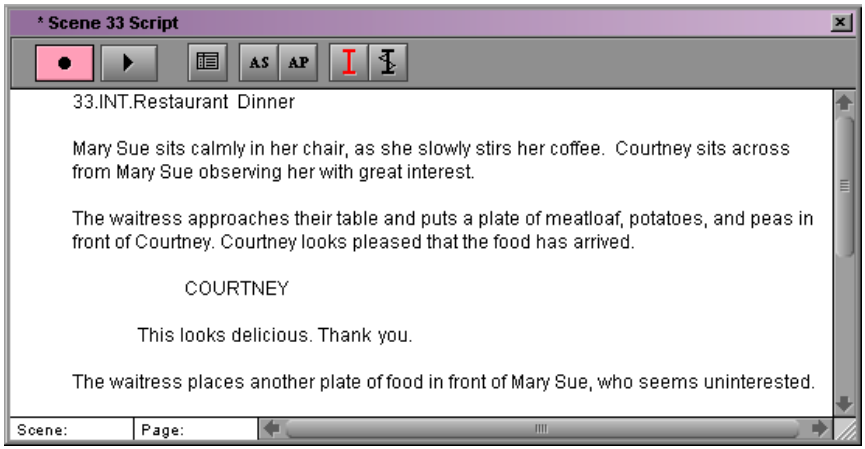
To import a new script:

1. Place the file in a directory that is available to your Avid editing system in one of the following ways:
   - Transport the file on removeable media, and copy it to your hard drive.
   - Place the file in a network location that you can access from your Avid editing system.
2. Click the Bins tab in the Project window of your Avid editing application.

   The Bins list appears.
3. Select File > New Script.

   The Open dialog box opens.

4. Locate the file and double-click it, or select the file and click Open.
   - A script bin appears in the Bins list in the Project window.
   - The script, with its original layout, appears in the Script window.


* Scene 33 Script
AS
AP
33.INT.Restaurant Dinner
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
The waitress approaches their table and puts a plate of meatloaf, potatoes, and peas in front of Courtney. Courtney looks pleased that the food has arrived.
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
Scene:
Page:

5. Change the name of the script bin by clicking the title in the Bins list in the Project window, and typing a new name.

Selecting Text Encoding for Scripts

You can specify the text encoding of the script. This ensures that diacritical marks and multibyte character sets appear correctly in your script.

To select text encoding:

- Select Script > Text Encoding, and then select the text encoding for the script as described in the following table.

Text Encoding Options

Option	Description
None	No encoding is specified; the system default is used. Select this option when the text was created on a system with the same system character set you are currently using. Use this option for non-Latin-based encoding where UTF-8 was not used.
Mac (MacRoman)	Select this option when the script was created on a Macintosh system using the MacRoman character set. This is the default encoding on Macintosh systems for plain text using the Latin character set.

Text Encoding Options (Continued)

Option	Description
PC (Latin-1)	Select this option when the script was created on a Window-based system using the Latin-1 character set. This is the default encoding on Windows-based systems for plain text using the Latin character set.
UTF-8	Select this option when the script was created using the Unicode UTF-8 character set.

Non-native characters might not display correctly even if they are encoded in UTF-8. Even though the text is encoded correctly, the ability to display non-native characters is limited at this time.

Opening, Closing, and Saving the Script Window

The Script window behaves in many respects like a bin:

- When you make changes in the Script window, an asterisk (Windows) or a diamond (Macintosh) appears in the title bar to indicate that the changes have not yet been saved.
- You save changes by selecting File > Save Script.
- Auto-save functionality also applies to the Script window, based on parameters established in the Bin settings.
- You can save a copy of the Script window by selecting File > Save a Script Copy As.
- Script window files are saved in the project folder along with bins, and backup copies are stored automatically in the Avid Attic folder.

When you save a Script window, the saved file is given an .avc file name extension.

- You can select File > Open Bin to open existing Script window (.avc) files and add them to the Other Bins folder in the Bins list in the Project window.
- You can select File > New Script to open a new script (.txt) file and add it to the Bins list in the Project window.
- You can select File > Close to close Script windows.

Displaying Clip and Sequence Information in a Script Window

The Info window displays statistical information about a clip or sequence. The window updates the information automatically.

To open the Info window from a Script window:

1. Press the Alt key (Windows) or the Option key (Macintosh), and click the Takes tab.
2. Drag the window to a new location to leave the Info window open.

Exploring the Script Window

After importing a script, you can navigate to any point in the text by using basic techniques available in most word processors:

- Use the bar on the right to scroll up or down.
- Resize the window by dragging the size box in the lower right corner.
- Press the Page Down or Page Up key to move one screen at a time.
- Press the Home or End key to move to the beginning or end of the script.
- Press the Up Arrow or Down Arrow key to move your line selection up or down by one line.

You can also use several search features, as described in "Searching Through Script" on page 299.

Adjusting the Script Margins

You can resize a Script window at any time to show more script or to enlarge the right margin by dragging the size box in the lower right corner.

The default size of the left margin is established on import, based on the current Script settings. You can also override the margin setting and adjust the left margin after importing the script.

To adjust the left margin of an imported script:

1. Select Script > Left Margin.

   The Left Margin dialog box opens.
2. Type a new margin size (in pixels) in the text box, and click OK.

   The Script window reflects the new setting.

Manipulating Script Text

After importing a script, you can customize its appearance by changing the font and font size. You can also cut, copy, paste, or remove lines of script to reflect changes that might occur during the course of a project.

Changing the Font of the Script

The default font and font size used in the script are established on import, based on the current Script settings. You can override the settings and change the font and size after importing the script.

To change the font and size of imported script:

1. Select Edit > Set Font.

   The Set Font dialog box opens.

2. Click the Font menu, and select a new font. The menu includes all fonts currently installed in the system.

3. Type a new font size in the text box, and click OK.

   The Script window reflects the new settings.

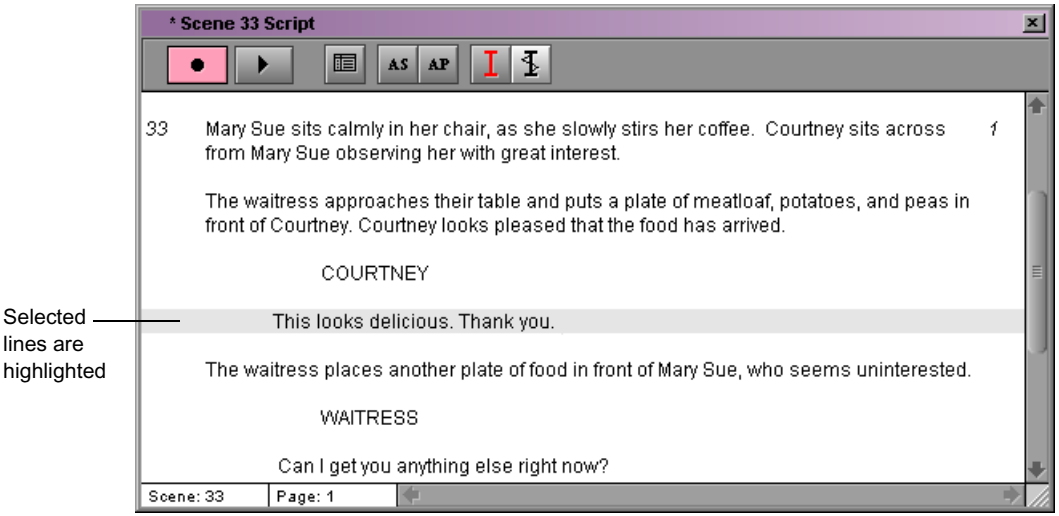
As you enlarge font size, the available sizes for the slate frames also increase. This can be useful for presentation or screening purposes, when you need to display extra-large text and slate frames for a large audience or across a room. For information on enlarging slate frames, see "Resizing Slates" on page 304.

Selecting Text

Selecting text in the Script window is similar to making selections in a word processor, except that the smallest unit you can select is an entire line of text.

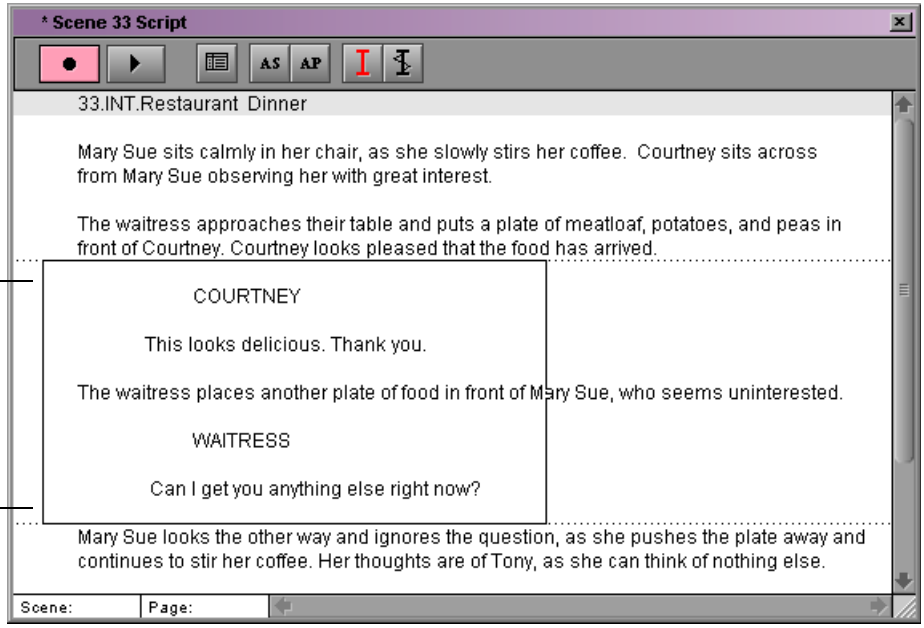
To select a single line of script:

- Click anywhere in the line to highlight it.


* Scene 33 Script
AS
AP
33
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
1
The waitress approaches their table and puts a plate of meatloaf, potatoes, and peas in front of Courtney. Courtney looks pleased that the food has arrived.
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
WAITRESS
Can I get you anything else right now?
Scene: 33
Page: 1
Selected lines are highlighted

To select several lines of script, use one of the following methods:

- Lasso the first line of the selection, and drag through the text. As you drag, a box outlines your selection.


* Scene 33 Script
AS
AP
33.INT.Restaurant Dinner
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
The waitress approaches their table and puts a plate of meatloaf, potatoes, and peas in front of Courtney. Courtney looks pleased that the food has arrived.
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
WAITRESS
Can I get you anything else right now?
Mary Sue looks the other way and ignores the question, as she pushes the plate away and continues to stir her coffee. Her thoughts are of Tony, as she can think of nothing else.
Scene:
Page:
Lasso a portion of script to select it.

  Release the mouse button when you finish lassoing the selected lines. The text is highlighted.

- Click the first line of the selection, and then Shift+click the last line. The entire block of text is highlighted.
- Press Ctrl+A (Windows) or Command+A (Macintosh) to select all the text and takes.

You can also extend a selection by pressing the Shift key and clicking a line of text preceding or following the current selection.

Cutting, Copying, and Pasting Script

You can cut, copy, and paste text in the script as you would in a normal word processor. However, because you cannot select individual words or characters, you can move only lines or paragraphs.

To rearrange or rewrite individual words or characters in the script, you should make the changes in a word processor before importing them into a separate Script window. You can then use the procedures in this section to copy and paste the new lines into the existing Script window, overwriting the incorrect lines.

You cannot undo cut, copy, or paste operations in the Script window.

To cut or copy lines of script and then paste them:

1. Select the lines.
2. Select Edit > Cut or Edit > Copy.
3. Select the line below the location where you want to insert the text.
4. Select Edit > Paste.

   If you selected only one line at the insertion point, a message box asks if you want to replace the selected line.

If you selected more than one line at the insertion point, no message box opens. When you select Edit > Paste, the selected lines are replaced with the text you cut or copied in step 2. You cannot use the Undo command after performing this step.

5. Make a choice based on your needs:
   - Click Replace to overwrite the selected line.
   - Click Insert Before to insert the text above the selected line.
   - Click Insert After to insert the text below the selected line.

   The text is pasted into the script.

Removing Script Text

You cannot delete lines of text from the Script window by using the Delete key as you would in a normal word processor. Use the Cut command to remove the text.

To remove lines of script:

1. Select the lines of script you want to delete.
2. Select Edit > Cut.

Unlike a normal deletion, the text remains in the Windows Clipboard or Macintosh Clipboard until the next time you copy or cut a selection.

Searching Through Script

Script integration provides a number of search tools you can use during the preparation phase, during editing, or during screenings. You can apply and search for page or scene numbers, or you can conduct a full-text search.

You can use the Find Bin and Find Script buttons to match back and forth between script and clips. For more information, see "Finding Script" on page 321.

Using Page and Scene Numbers

When you add page and scene numbers to the Script window, you gain the ability to search for them during preparation of the script and during editing. You can customize page and scene numbering by adding, changing, and moving the numbers as necessary.

Adding a Page or Scene Number

To add a page or scene number:

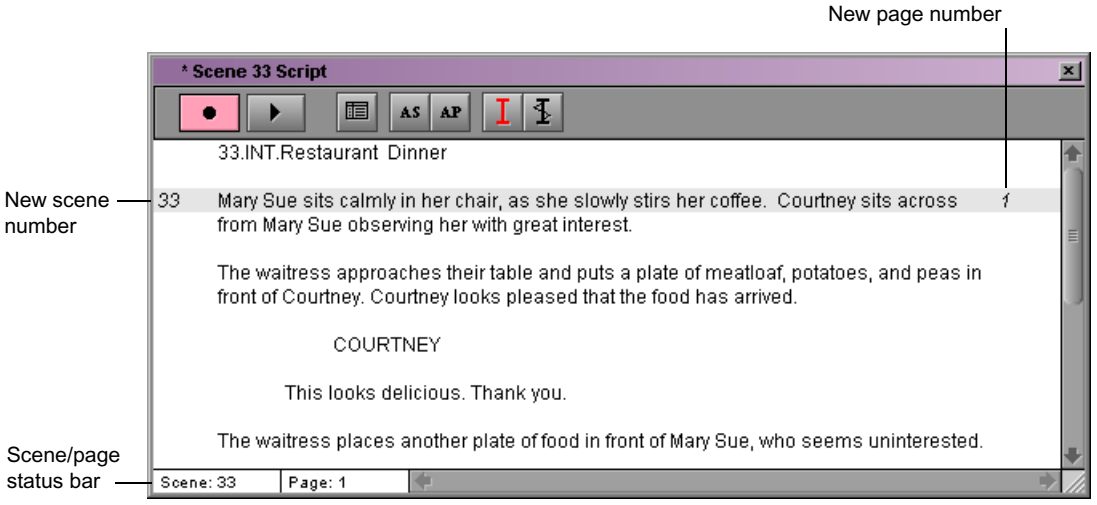
1. Select the line of the script at the beginning of the scene or page.

2. Click the Add Scene or the Add Page button in the Script window toolbar, or select Script > Add Scene or Script > Add Page.

   A dialog box opens.

3. Type the number for the scene or page, and click OK.

   The scene number appears in the left margin and the page number appears in the right margin next to the first line of the selected region.


New page number
* Scene 33 Script
AS
AP
33.INT.Restaurant Dinner
New scene number
33 Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest. 1
The waitress approaches their table and puts a plate of meatloaf, potatoes, and peas in front of Courtney. Courtney looks pleased that the food has arrived.
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
Scene/page status bar
Scene: 33
Page: 1

   Scene and page numbers both appear in the status bar at the bottom of the Script window and reflect your current position within the script. Each scene or page number continues throughout the script until you mark another line as the beginning of a new scene or page.

Changing a Page or Scene Number

You can change a scene or page number to correct any errors that occur when adding numbers, and to reposition scene and page numbering to match script changes during postproduction.

To change a page or scene number:

1. Select the beginning line of the scene or page.
2. Do one of the following:
   - Click the Add Scene or Add Page button in the Script window toolbar.
   - Select Script > Add Scene or Script > Add Page.

   A dialog box opens.
3. Type a new number for the scene or page, and click OK.
4. If the renumbering affects page or scene numbers that precede or follow the current change, then repeat these steps as necessary.

Deleting a Page or Scene Number

To delete a page or scene number:

1. Select the first line of the scene or page.

You can also delete all page or scene numbering throughout a range of the script by selecting the range of lines or the entire script.

2. Press the Delete key.

   The Delete dialog box opens.

3. Select the options for Delete scene(s) or Delete page break(s) as appropriate, and click OK.

   The numbering is deleted from the Script window.

Searching for a Page or Scene Number

Once you have added scene and page numbers, you can search for them quickly during editing.

To search for a page or scene number:

1. Select Script > Go To Page or Script > Go To Scene.

You can also click in the page or scene display in the status bar at the bottom of the Script window.

   The Go To Scene/Page dialog box opens.

2. Type the number of the scene or page, and click OK.

   The Script window scrolls to the page or scene, and the first line is highlighted. If you type a page or scene number that is not in the script, then no action occurs.

Conducting a Text Search

To search for text in the script:

1. With the Script window active, select Edit > Find.

   The Find dialog box opens.

2. Type the text you are looking for.

3. Select one of the optional search parameters, when appropriate:

   - If you do not want the search to be case sensitive, select Ignore Case.
   - If you do not want the search to highlight instances where your text is part of another word, select Whole Word.

4. Click OK.

   The first occurrence of the text is highlighted in the Script window.

5. Select Edit > Find Again to search for the next occurrence of the text.

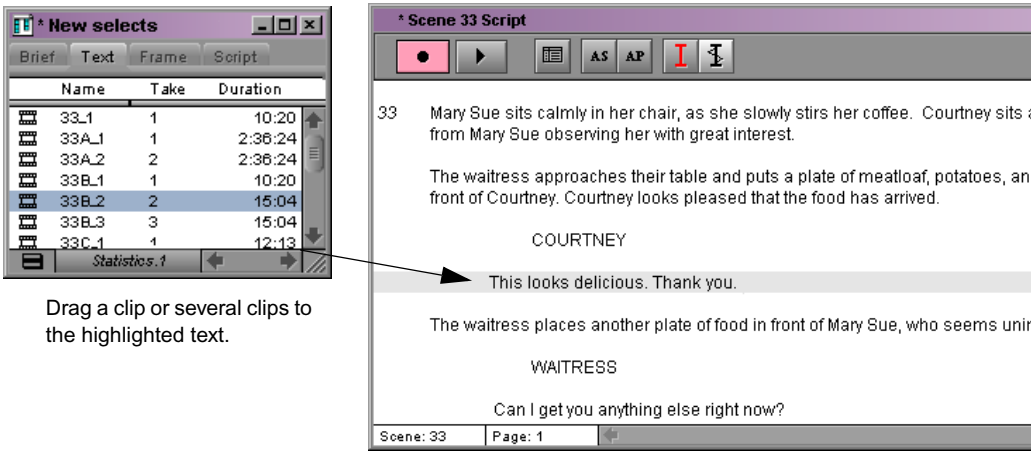
Linking Clips to the Script

You can link clips to the script by hand, or you can use the ScriptSync feature to automatically link clips to the script. For more information about ScriptSync, see "Marking with ScriptSync" on page 316.

To link clips to the script:

1. Open the script bin by double-clicking the Script Bin icon.
2. Open the source bin for the clips that you want to link to the script.
3. (Option) Sort the source clips to make the job easier:
   - You can sort the Scene/Take column for an alphanumeric list of clips that matches their relative order in the script.
   - If you are not working with scene and take information (for example, in a video documentary project), you can provide your own numbering for the clips in a custom column, or you can sort the clips manually in Frame view according to their order in the script. For more information on adding a custom column, see "Adding Customized Columns to a Bin" on page 224.
4. Select the portion of the script that is covered by the first clip or clips.
5. Select the clip or clips in the source bin, and drag them to the highlighted text.

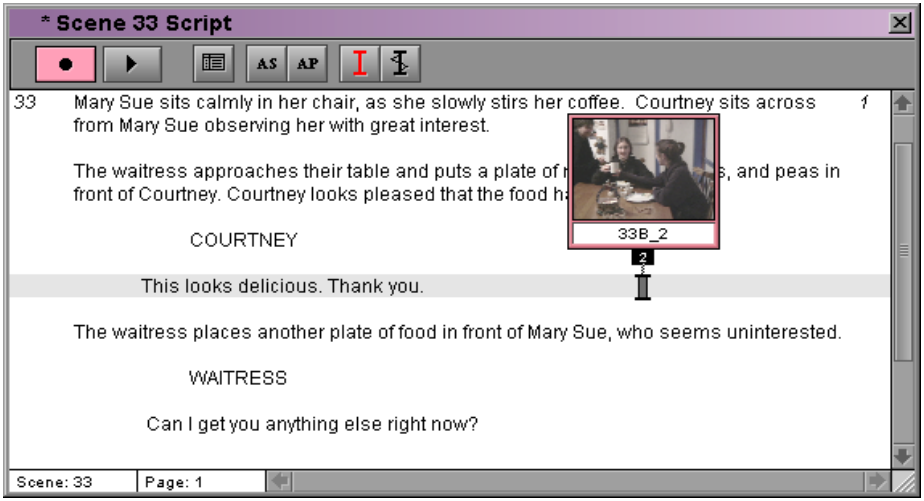
Make sure the pointer is over the highlighted text before releasing the mouse button.


* New selects
Brief
Text
Frame
Script
Name
Take
Duration
33_1 1 10:20
33A_1 1 2:36:24
33A_2 2 2:36:24
33B_1 1 10:20
33B_2 2 15:04
33B_3 3 15:04
33C_1 1 12:13
Statistics.1
* Scene 33 Script
AS
AP
33 Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits
from Mary Sue observing her with great interest.
The waitress approaches their table and puts a plate of meatloaf, potatoes, an
front of Courtney. Courtney looks pleased that the food has arrived.
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems unir
WAITRESS
Can I get you anything else right now?
Scene: 33
Page: 1

Drag a clip or several clips to the highlighted text.

A slate frame appears above the text, with one or more of the takes covering the scene as lines.

The slate appears.


* Scene 33 Script
AS
AP
33 Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across 1
from Mary Sue observing her with great interest.
The waitress approaches their table and puts a plate of
, and peas in
front of Courtney. Courtney looks pleased that the food h
33B_2
2
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
WAITRESS
Can I get you anything else right now?
Scene: 33
Page: 1

6. Continue to apply clips to additional portions of the script until you have finished creating all your slates.

   Alternatively, you can create slates one at a time, place script marks, and fine-tune the lining of each scene before proceeding to the next portion of the script.

Interpolating Position for Script Integration

Interpolate Position matches a clip to a take and allows you to see where a particular line in the script would appear in the clip footage.

When you set Interpolate Position, the length of the take in the script is matched to the length of the clip in the Source monitor. The position indicator in the Source monitor corresponds to wherever you double-click in the take.

If you set a script mark in the take, the portions of the take on either side of the script mark are matched to the portions of the clip on either side of the IN point in the Source monitor.

To set Interpolate Position:

- Select Script > Interpolate Position.

You can change the default behavior before opening a script in the Script window by selecting Interpolate Position in the Script Settings dialog box. See "Script Settings Options" on page 291.

Manipulating Slates

Once you create a slate by dragging a clip into the Script window, you can manipulate the slate's appearance and position.

Selecting Slates

To select slates, do one of the following:

- Click a slate to select it.
- Shift+click additional slates to select all the active takes.
- Drag a lasso through a region of the script containing slates. All slates and takes within the lasso are selected.

Selecting multiple slates is especially useful when you are adding or deleting color or off-screen dialog indicators across takes, as described in "Manipulating Takes" on page 308.

Resizing Slates

You can resize the slates the same way you resize frames in the bin in Frame view.

To enlarge the slates:

- Select Edit > Enlarge Frame.

To reduce the slates:

- Select Edit > Reduce Frame.

You can enlarge the font size of the script to increase the size of the slate frames. This can be useful for presentation or screening purposes when you need a large display for an audience. For information on resizing the font, see "Changing the Font of the Script" on page 295.

Holding Slates On Screen in the Script Window

When you are working with slates in the Script window, you can choose to hold slates on screen. As you scroll a script in the Script window, each slate will remain on screen as long as the take lines to which it is linked remain on screen.

To hold slates on screen:

- Select Script > Hold Slates Onscreen.

You can change the default behavior before opening a script in the Script window by selecting Hold Slates Onscreen in the Script Settings dialog box. For more information, see "Script Settings Options" on page 291.

Hiding Slate Frames

By default, the system displays a representative frame for each take in the slates. You can hide this frame display and show only the clip name to simplify the interface or speed up scrolling and movement in a complex Script window.

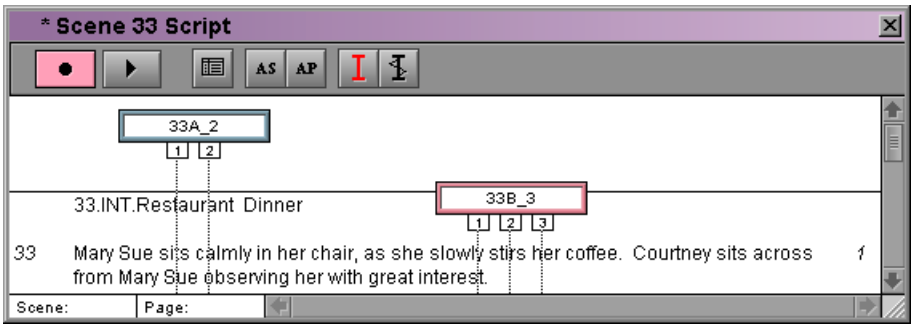
You can change the default behavior before opening a script in the Script window by deselecting Show Frames in the Script Settings dialog box. See "Script Settings Options" on page 291.

To hide the slate frames:

- Select Script > Show Frames.

  The check mark to left of the command is removed, indicating Show Frames is disabled.

  The Script window shows only the clip names for the takes.



To restore the frames:

- Select Script > Show Frames again.

Showing One Take Per Slate

You can minimize clutter on the screen by showing only one take per nonactive slate.

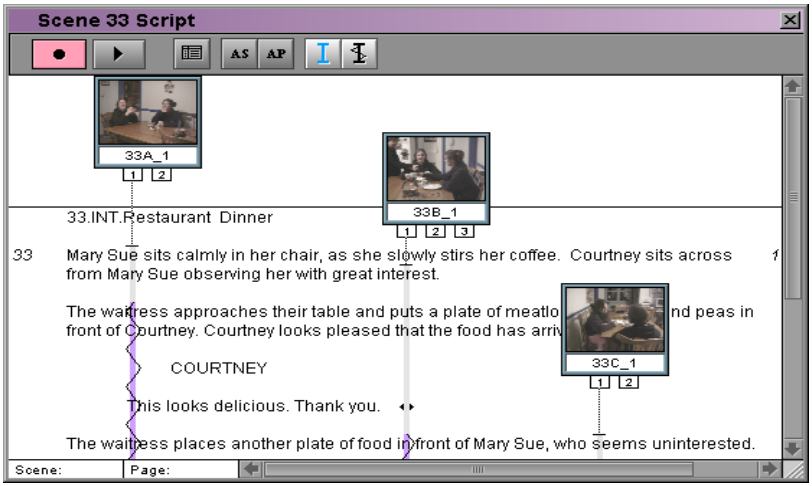
To show one take per nonactive slate:

- Select Script > Show All Takes.

  The check mark to left of the command is removed, indicating Show All Takes is disabled.

The Script window shows only the first take in each nonactive slate.

A single take is shown.



To display all the takes:

- Select Script > Show All Takes again.

Moving a Slate

You can adjust the position of slates to make room for more slates, to avoid blocking words, or to display takes over specific lines.

To move a slate, use one of the following methods:

- To move a slate horizontally, click the slate and drag it to the left or the right. (If necessary, resize the Script window by dragging the size box.)
- To move a slate vertically without moving the position of the take lines in the script, click the slate and drag it up or down. The take lines remain fixed over the text to which they have been previously linked.
- To move the slate and all its take lines vertically to a new location in the script, press the Ctrl key (Windows) or the Command key (Macintosh), and then drag the slate to the new location.

As you move the slate, the takes continue to cover the same number of lines in the script. To lengthen or shorten the number of lines covered in the takes at the new location, see *"Adjusting Take Lines" on page 311.*

Deleting a Slate

Occasionally, you might need to delete a slate — for example, when you find that the takes in the slate are no longer needed.

When you delete slates and takes from the Script window, the captured source clips remain in the source bins.

You cannot undo the deletion of slates. To restore a slate after deletion, you need to re-create the slate. See "Linking Clips to the Script" on page 302.

To delete a slate:

1. Select all the takes in the slate by pressing the Shift key and clicking the tab for each take.
2. Press the Delete key.

   The Delete dialog box opens.
3. Select Delete Takes, and click OK.

   The slate and all its takes are deleted from the script.

Manipulating Takes

Script integration provides a number of tools and techniques for manipulating the relationship between lined takes in the Script window and their source clips, as described in this section.

Selecting Takes

To select takes, use one of the following methods:

- Click any take tab to select it. The outline of the take changes to red, indicating that the take is active.
- Double-click any line in the take to select the take and load it into a monitor.
- Shift+click additional takes in the same slate or across slates to select them.
- Drag a lasso through an entire region of the script. All takes within the lasso are selected.

Selecting multiple takes is especially useful when you add or delete color or off-screen dialog indicators. See "Using Color Indicators" on page 312 and "Indicating Off-Screen Dialog" on page 311.

Adding Takes

To add another take to an existing slate:

1. Select the region of the script that the take covers.
2. Open the bin where the clip for the take is located.
3. Drag the clip to the slate.

   The new take appears in the slate and is applied to the selected region of the script.

You need to manually adjust the take lines if the new take covers a region different from the existing slate. See "Adjusting Take Lines" on page 311.

Deleting Takes

As you screen clips, you might find that a take has been applied to the wrong scene and should be deleted from the slate. You might also decide to delete a bad take to simplify the script interface for the editor.

You cannot undo the deletion of takes. To restore a take after deletion, see "Adding Takes" on page 309.

To delete one or more takes:

1. Select the takes in the Script window.
2. Press the Delete key.

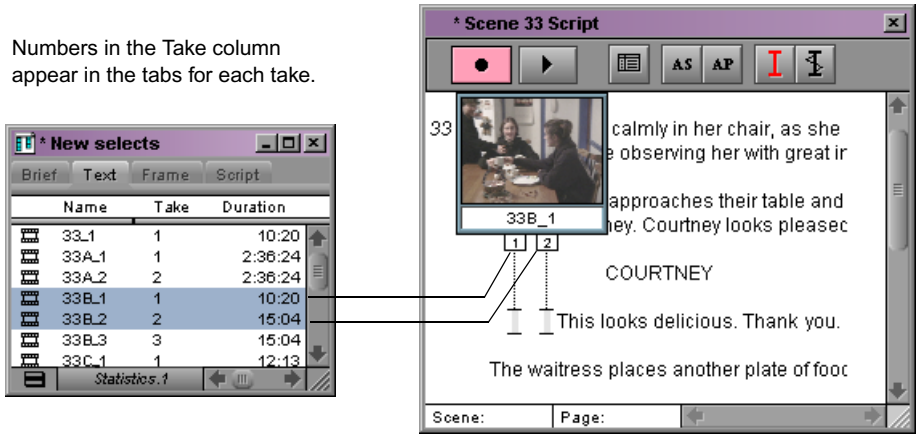
   The Delete dialog box opens.
3. Select Delete Takes, and click OK.

   The takes are deleted.

Displaying Take Numbers

To display the take numbers in the tab of each take:

- Type the numbers in the Take column of the source bin for the clips.



Changing the Representative Frame for a Take

To change the representative frame that appears in the slate for a take:

1. Select the Takes tab in the Script window.
2. Press the appropriate arrow keys or step keys on the keyboard to advance the footage displayed in the slate forward or backward to the frame you want.

You can also select multiple takes and advance them all at once.

Loading Takes

To load individual takes into the Source monitor:

- Double-click any Takes tab.

To load multiple takes into the Source monitor:

- Select multiple takes, and then double-click any take you selected.

Playing Takes

To play back a take, do one of the following:

- Double-click a take to load it into the Source monitor, and then click the Play button or press the Play key.

  The clip plays back and stops when it reaches the end.

- Select a take in the script, and then click the Play button at the top of the Script window.

  The clip loads and plays back in a continuous loop until you press the space bar. If you selected more than one take, each take plays in sequence.

Adjusting Take Lines

As you screen clips in the script, you might find that a take or group of take lines should begin earlier or end later in the script. You can adjust the take lines by moving the beginning mark, the end mark, or both.

To change the length of a take line:

1. Press the Ctrl key (Windows) or the Command key (Macintosh).

   Notice the movement icon that appears when you place the pointer at either end of the take.

2. Click the end mark or beginning mark of a take, and drag it until you reach the correct line in the script.
3. Press the Ctrl key (Windows) or the Command key (Macintosh), and drag the opposite end of the take to a new location, if necessary.
4. Repeat the procedure for other takes in the slate as necessary.

Indicating Off-Screen Dialog

In the traditional lined script, you indicate off-screen dialog by drawing a jagged line next to the dialog. You can apply a similar effect to lines in the Script window.

To indicate off-screen dialog:

1. Select the range of script containing the off-screen dialog.
2. Select one or more takes that you want to mark with the off-screen indicator.

3. Click the Set Offscreen button in the Script window toolbar.

   The off-screen indicator appears, superimposed on the selected takes of the highlighted range of the script. You can switch the indicators on or off by clicking the button repeatedly.

You must select the range of the script that contains the off-screen dialog before enabling the off-screen function.

To remove one or more off-screen indicators:

1. Select the range of script containing the off-screen indicators.
2. Select only those takes that display the indicators.
3. Click the Set Offscreen button.

Using Color Indicators

You can use color to indicate several pieces of information, including:

- Preferred takes or takes used in the current active sequence
- Picture versus audio track used in the current active sequence
- Line changes in dialog
- Use of multiple cameras

To apply color to takes:

1. Select Script > Color > *color*.
2. Select the region of the script that covers the range within the take or takes that you want to highlight with color.
3. Select one or more takes.
4. Click the Set Color button in the Script window toolbar.

   The color appears only in the highlighted script region of the selected takes. You can switch the indicators on or off by clicking the button repeatedly.

You must select the range of the script that you want to highlight with color before enabling the color indicator function.

To remove one or more color indicators:

1. Select the range of script containing the color indicators.

   The first take in the selected region determines the color indicator status displayed in the Set Color button.
2. Select only those takes that display the indicators.
3. Click the Set Color button.

Using Script Marks

Script marks allow you to synchronize individual lines of script with matching points in captured clips. When you place a mark in the script, an IN point also appears in the clip when you load it into a monitor for editing. This provides line-by-line control over alternative takes that the editor can instantly load and edit into the sequence.

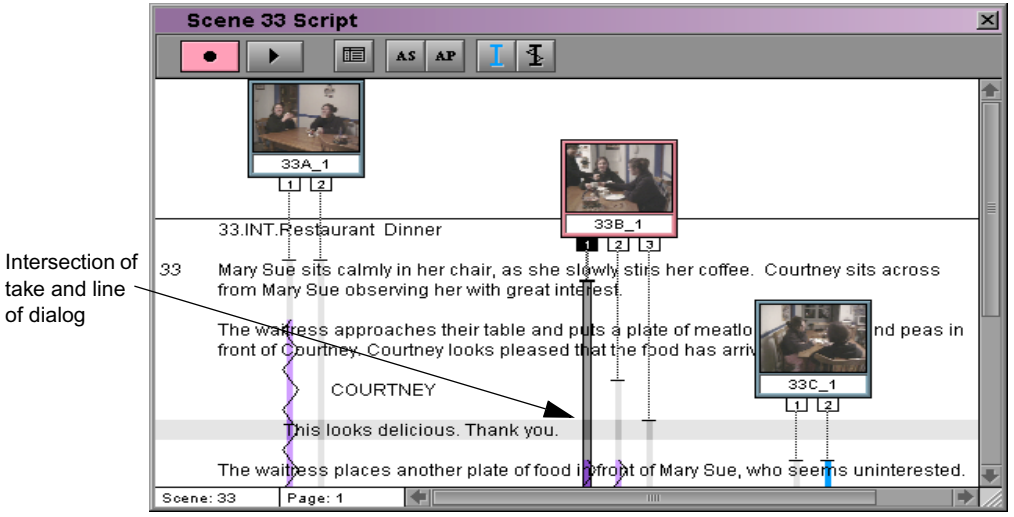
You can place script marks in several ways:

- One take at a time: see "Placing Script Marks Manually" on page 313.
- In a playback loop in real time: see "Using Real-Time Screening and Marking" on page 315.
- Automatically using ScriptSync: "Marking with ScriptSync" on page 316.

Placing Script Marks Manually

To place script marks manually:

1. Map the Add Script Mark button from the Other tab in the Command palette to a user-customizable palette or to the Keyboard palette.
2. Double-click in the Script window at the intersection of a take and the line of dialog that you want to mark.


Scene 33 Script
AS
AP
33A_1
33B_1
33C_1
33.INT.Restaurant Dinner
33
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
The waitress approaches their table and puts a plate of meatlo
nd peas in front of Courtney. Courtney looks pleased that the food has arriv
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
Scene: 33
Page: 1
Intersection of take and line of dialog

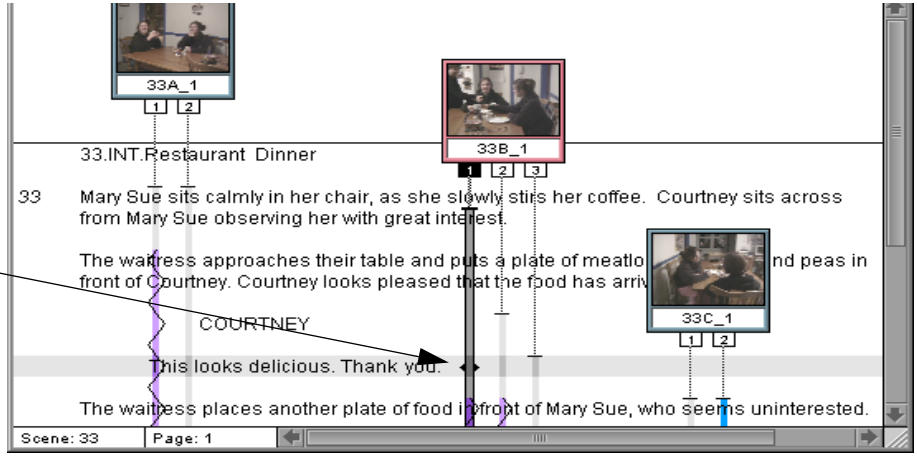
The take is selected in the slate, the selected line of the dialog is highlighted, and the clip loads into the Source monitor.

3. Click the Play button, or press the Play key. The take plays in the monitor.

   Alternatively, you can step (jog) or shuttle through the footage, place the position indicator on the exact frame, or scrub the audio to find the exact line of dialog. The clip does not have to be playing.

4. When the playback reaches the selected line of dialog, click the Add Script Mark button or press the Add Script Mark key.

   The line is marked in the Script window with a small horizontal bar, and play stops.


33A_1
33B_1
33C_1
33.INT.Restaurant Dinner
33
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
The waitress approaches their table and puts a plate of meatlo
nd peas in front of Courtney. Courtney looks pleased that the food has arriv
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
Scene: 33
Page: 1

The script mark appears.

5. Repeat these steps to add more script marks.

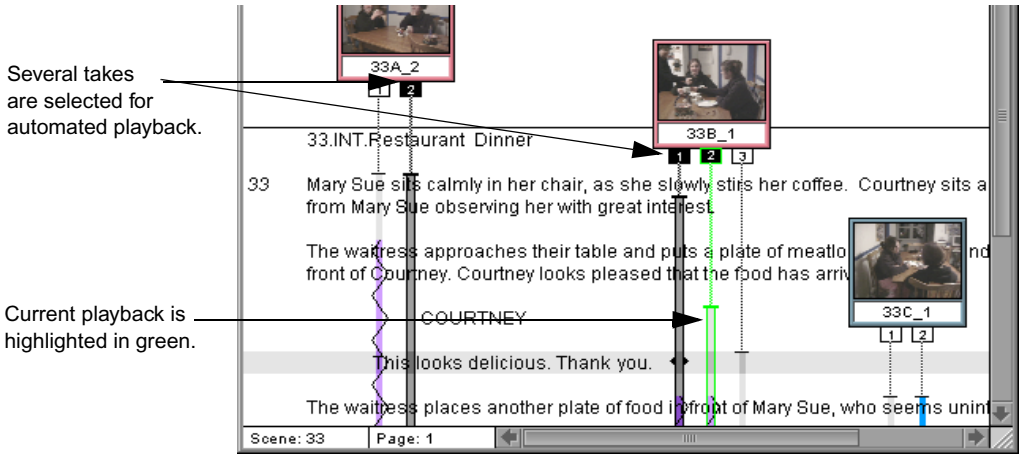
Using Real-Time Screening and Marking

The Script window provides controls for automating the process of screening and placing script marks for a single take or across multiple takes.

To use real-time screening and marking:

1. Select one or more takes.
2. Click the Record button in the Script window toolbar.

   The first selected take changes to green in the Script window, the system automatically loads the clip into the Source monitor, and the clip begins to play.


Several takes are selected for automated playback.
Current playback is highlighted in green.
33A_2
33B_1
33C_1
33.INT.Restaurant Dinner
33
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits a
from Mary Sue observing her with great interest.
The waitress approaches their table and puts a plate of meatlo
front of Courtney. Courtney looks pleased that the food has arriv
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems unint
Scene: 33
Page: 1

3. As you hear a line of dialog (or see a particular clip) that you want to mark, click the matching line in the Script window.

   A script mark appears at that location in the take, and the clip continues to play.

You can scroll through the Script window without affecting playback.

4. Continue to mark additional sync points using one of the following methods:
   - Click a line that already contains a mark to replace the previous mark and update the sync point in the clip.
   - Click a line in the script before or after the range of the existing take line, and the mark is added while the take line is extended to include the new line.
   - Use variable-speed play controls (J-K-L keys on the keyboard) to shuttle, step, or pause during playback.
   - Press the Tab or Shift+Tab keys on the keyboard to begin playback of the next or the previous take.

   As each take reaches its end, the system automatically loads and plays the next take.
5. Continue to place marks until all takes have been screened.

To stop the playback loop:

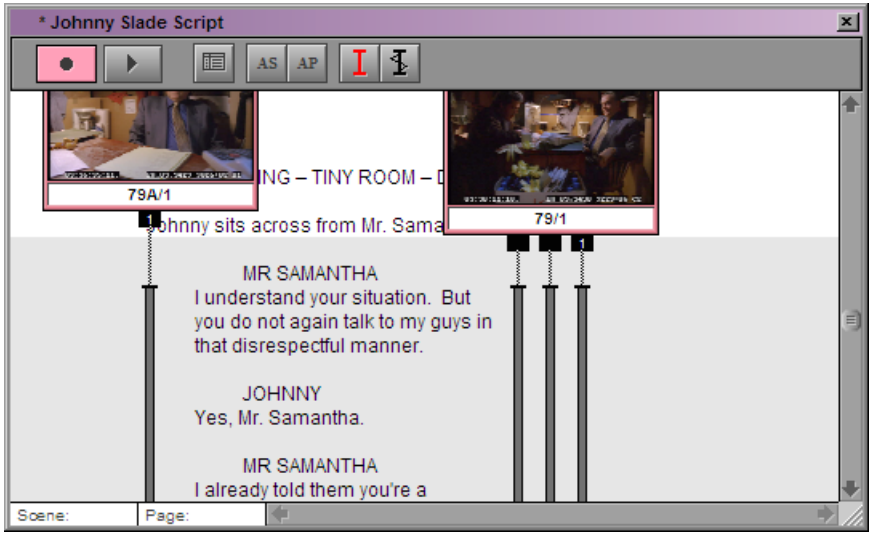
- Press the space bar.

Marking with ScriptSync

ScriptSync uses phonetic-indexing technology from Nexidia™ to analyze the audio portion of a clip and match it to lines of the script text.

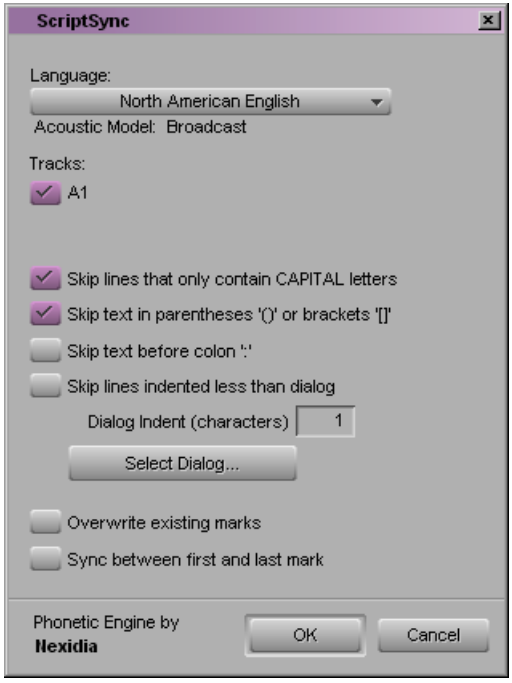
To add script marks with ScriptSync:

1. Select one or more takes that include audio.
2. Double-click any line in the take to select the take and load it into a monitor.



3. Select Script > ScriptSync.

   The ScriptSync dialog box opens.



4. Select options as described in the following table.

ScriptSync Options

Option	Description
Language	Select the language of your script (this setting is for both the audio and the text). *Depending on the language you select, the Acoustic model used by Nexidia changes; the models are Broadcast and Telephony. Only one model applies per language. Broadcast has a higher resolution and can be more accurate than Telephony in some cases. The Broadcast model is used for North American English, Dutch, Latin American Spanish, and Modern Standard Arabic.*
Tracks	Select the audio tracks you want as input to ScriptSync.
Skip lines that only contain CAPITAL letters	Select this option if lines that contain only all-capital letters are not part of the spoken dialog. Dramatic scripts often use all-capital letters to identify the speaker or for scene descriptions.

ScriptSync Options (Continued)

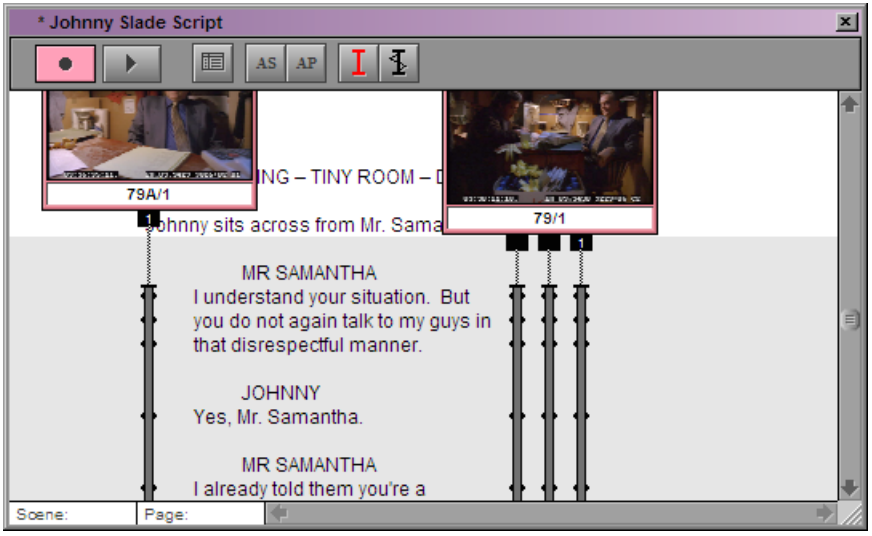
Option	Description
Skip text in parentheses '()' or brackets '[]'	Select this option if parenthetical expressions in your script are not spoken.
Skip text before colon ':'	Select this option to skip all text before the first colon in a line of text. For example, select this option if your script uses the convention of placing a character's name before a colon when the character begins to speak.
Skip lines indented less than dialog	Select this option if action is indented less than dialog in your script. If you select this option, also type the number of characters that dialog is indented in the Dialog Indent (characters) text box, or click the Select Dialog button, select a line of dialog from the Script so the application can automatically infer the correct number of characters, and then click OK.
Overwrite existing marks	Select this option if the take you are syncing already contains script marks and you want ScriptSync to update those marks.
Sync between first and last mark	Select this option to restrict ScriptSync to analyze only the script between the lines of text and the media specified by the first and last script marks in a take. If there is only one mark in the take, ScriptSync analyzes the script from the text and the media specified from the first mark to the end of the take and media. This can be useful if there is non-dialog talking on the audio clip that you want to exclude from the syncing process. *If you select this option and the last script mark in the take is not at the end of the take, ScriptSync operates only until the last mark in the text.*

5. Click OK.

   The syncing process starts. A thermometer tracks the progress.

6. (Option) Press Ctrl+. (period) to cancel the process after it has started.

When ScriptSync finishes, your take includes a script mark for every line of text the application found in the audio.



7. Check through the marks. If ScriptSync missed any, add them manually as described in "Placing Script Marks Manually" on page 313.

Loading and Playing Marked Segments

Once you have placed marks syncing lines in your script to points in the source clips, you can quickly load and cue takes for selected lines of dialog. You can load a single take, or you can load all the coverage for any given range of lines.

To load the marked segment of a take:

- Double-click the script mark at the line of dialog that you want to cue.

  The take is loaded into the Source monitor and is cued to the synced line of dialog. An IN point is placed at the sync location.

To load all the coverage for a range of lines:

1. Select the lines in the Script window, dragging through all intersecting takes.

   The script lines and takes are highlighted.

2. Click the Play button in the Script window if you want to screen the takes for those lines, or click the Record button if you want to add script marks.

   The takes load and play back one after another. You can use the Tab key or J-K-L keys to jump between takes and to control playback.

Moving a Script Mark

When you move a script mark up or down, the mark in the source clip remains at the same frame but is resynced to a new line in the script.

To move a script mark:

1. Press the Ctrl key (Windows) or the Command key (Macintosh).

   Notice the movement indicator that appears when you move the pointer to a mark in the script.

2. Click the mark, and drag it to the new position.

Deleting a Script Mark

When you remove a script mark, you do not delete the marked portion of the take, only the sync point between the script and the source clip.

You cannot undo the deletion of script marks. To restore a script mark after deletion, see “Placing Script Marks Manually” on page 313.

To delete a script mark:

1. Click once on a script mark to select it. (If you double-click, you load the clip and make the Composer window active.)

You can select multiple script marks for removal by highlighting an entire region of text and selecting the takes containing the script marks you want to remove.

2. Press the Delete key.

   The Delete dialog box opens.

3. Select Delete 1 mark(s), and click OK.

   The mark is deleted.

Finding Clips and Script

After you have placed script marks, which synchronize lines in the Script window to frames in the source clips, you can use the Find Bin or Find Script buttons to search back and forth between the two items.

Finding Script

The Find Script button allows you to quickly match back from currently loaded clips to portions of script in the Script window to which the clip has been linked.

To find the script linked to a loaded clip:

1. Place the position indicator in the clip at the line of dialog (or within a range of dialog) that you want to find.
2.
Click the Find Script button in the Other tab of the Command palette.

   The Script window instantly scrolls to and highlights the portion of script that most closely matches the clip location.

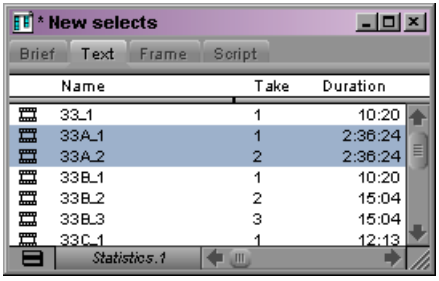
Finding Clips and Bins from the Script Window

Script integration allows you to search instantly through bins and to find the source clips for takes that have been linked to the script. You can search on a single take or on multiple takes across several slates.

To find source clips and bins:

1. Select the takes that you want to find.
2.
Click the Find Bin button in the Script window toolbar.

   Your Avid editing application searches through bins linked to the project, opens the bin containing the linked clips, and highlights them in the bin.



Editing with the Script Window

Using the Script window in combination with the Single Mark Editing feature, you can edit in a highly streamlined manner. For information about the Single Mark Editing feature, see the Help.

To use the Script window most effectively during a session, make sure:

- The Script window is fully prepared, including preferred takes, alternative takes (indicated with colors), and script marks for matching lines of text to sync points in the clips.
- The Single Mark Editing option is selected in the Edit tab of the Composer Settings dialog box. This option allows you to skip several steps by performing edits on-the-fly while playing back clips (without marking OUT points). For more information, see "Single-Mark Editing" in the Help.

Assembling a Rough Cut

To quickly assemble a rough cut from the Script window:

1. Open the Script window for the current cut.
2. Double-click the first preferred take to load it into the Source monitor. The IN point is already marked and cued.
3. Play the take until the appropriate OUT point is reached, and stop play.
4. Click the Splice-in or the Overwrite button to make the first edit.

5. Prepare the sequence for the next edit:
   a. Create new tracks, if necessary.
   b. Enable the appropriate source and record tracks.
   c. Patch the tracks, if necessary.
   d. Mark an IN point in the sequence for the next edit.
6. Double-click the next preferred take to load it.
7. Play the clip until you reach the appropriate OUT point, and stop play.
8. Perform the edit on-the-fly.
9. Repeat steps 5 through 8 until you have moved through the entire scene or segment.
10. Fine-tune the edits by using normal trimming and editing procedures. Continue to use the Script window to quickly load and cue alternative takes as necessary.

Splicing a Script Range

During editing, you can use the Ctrl and Alt keys (Windows) or the Ctrl key (Macintosh) to instantly splice clips linked to ranges of script directly from the Script window into the sequence. To use this feature with accuracy, you should carefully mark with script marks the ranges of script during the screening and marking phase.

To splice a range:

1. Mark an IN point or place the position indicator at the location in the sequence where you want to splice in the segment.
2. Press the Ctrl key and Alt key (Windows) or the Ctrl key (Macintosh). Notice that the Splice-in arrow appears when you point to a take.
3. Double-click the preferred take within the range of dialog that has been marked with script marks.

   The marked section of the clip is spliced into the sequence.

Revising the Script

During or after each session, or when a scene or segment is completed, the editor or assistant editor can update the Script window to reflect the final edit decisions made during the day. In this way, you can maintain a complete record of the elements used to construct the scene or segment, as well as all existing alternatives. When further changes or repackaging are required, you can quickly retrieve all the source material in one window.

Interactive Screenings

The Script window is a valuable tool during screenings of work in progress, allowing you to:

- Quickly search for scenes and pages with clips attached for instant retrieval.

  Sequences are not loaded into the Script window. Instead, you can perform a video mixdown and load the resulting master clips. For more information, see the Help.
- Match back and cue source material to compare alternative takes.
- Quickly find and open bins for retrieval of additional material not included in the Script window.
- Enlarge script font and slate frames for better viewing by your audience.

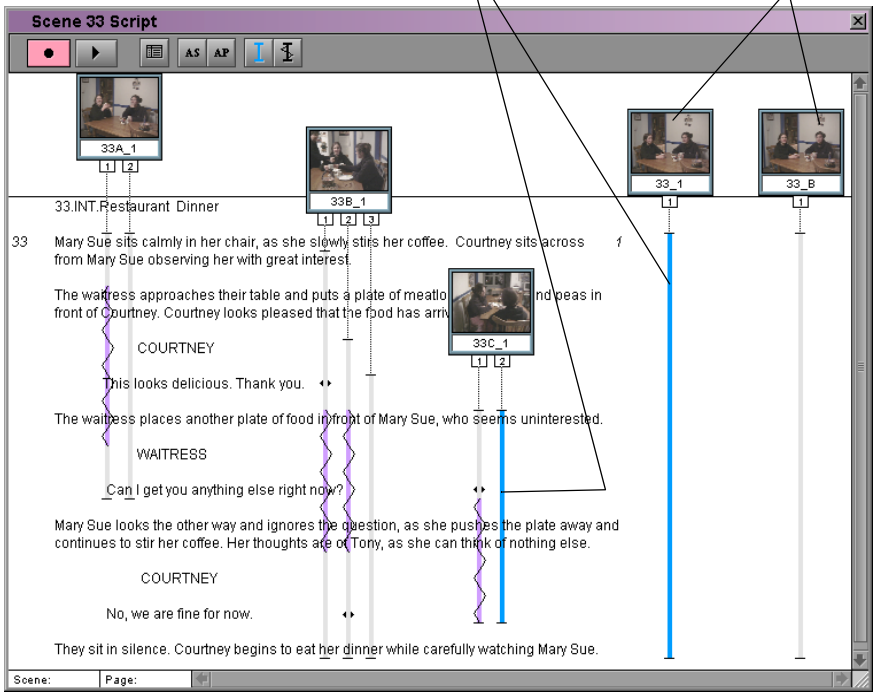
The Script window provides a visual, interactive look at the content of the original script against the elements in the final piece.

Sequences cannot be loaded into the Script window. Alternatively, you can perform a video mixdown and load the resulting master clips instead. For more information, see “Performing a Video Mixdown” in the Help.

All alternative takes are available for viewing and comparing.

Matching colors indicate takes used in the preferred cut as well as alternative cuts.

You can mix down alternative cuts to form master clips and place them next to the script.


Scene 33 Script
AS
AP
33A_1
33B_1
33C_1
33_1
33_B
33.INT.Restaurant Dinner
33
Mary Sue sits calmly in her chair, as she slowly stirs her coffee. Courtney sits across from Mary Sue observing her with great interest.
1
The waitress approaches their table and puts a plate of meatlo nd peas in front of Courtney. Courtney looks pleased that the food has arriv
COURTNEY
This looks delicious. Thank you.
The waitress places another plate of food in front of Mary Sue, who seems uninterested.
WAITRESS
Can I get you anything else right now?
Mary Sue looks the other way and ignores the question, as she pushes the plate away and continues to stir her coffee. Her thoughts are of Tony, as she can think of nothing else.
COURTNEY
No, we are fine for now.
They sit in silence. Courtney begins to eat her dinner while carefully watching Mary Sue.
Scene:
Page:

Chapter 9

Viewing and Marking Footage: Advanced

Before making your first edit, you can review your footage, add locators and comments to clips, mark IN to OUT points, and create subclips. By viewing and marking your material in advance, you can concentrate on editing and refining your sequence at a later time without having to pause and set marks each time you load a new clip.

The following topics describe advanced techniques for playing back, viewing, and subcataloging clips:

- Displaying the Info Window
- Displaying Timecode in the Timecode Window
- Adjusting the Play Delay Offset
- Using the Tool Palette
- Playing Selected Clips in a Loop
- Using Locators

For basic information about viewing and marking footage, see “Viewing and Marking Footage: Basics” in the Help or the Basics Guide for your Avid editing application.

Displaying the Info Window

The Info window displays statistical information about clips and sequences. You can open the Info window from the Source monitor, the Record monitor, a pop-up monitor, a bin, or a Script window. The Info window updates the information automatically.

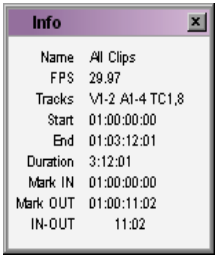
You can cut, copy, and paste information from the Info window anytime, but you cannot edit or change any information within the window.

If no clip or sequence is loaded in the Source monitor or Record monitor, the Info window is not available.

To display information from the Record monitor:

1. Do one of the following:
   - Move the pointer to the gray area *above* the Overwrite button.
   - Place the mouse pointer in the gray area to the right of the Clip icon.
2. Press and hold the mouse button.

   The Info window opens. Only fields with data are displayed.
3. Drag the window to a new location to leave the window open.



To display information from the Source monitor:

1. Move the pointer to the gray area *above* the Splice-in button.
2. Press and hold the mouse button.

   The Info window opens. Only fields with data are displayed.
3. Drag the window to a new location to leave it open.

To display information from a pop-up monitor:

1. Move the pointer to the left part of the top gray area.
2. Press and hold the mouse button.

   The Info window opens. Only fields with data are displayed.
3. Drag the window to a new location to leave it open.

To display information from a bin:

1. Do one of the following:
   - Press and hold the mouse button *over* the Clip icon in the bin.
   - Press Ctrl+Alt and click the clip for which you want to display information.

   The Info window opens. Only fields with data are displayed.
2. Drag the window to a new location to leave it open.

For information on displaying clip or sequence information from the Script window, see "Displaying Clip and Sequence Information in a Script Window" on page 294.

To copy text from the Info window:

1. Select the information you want to copy.
2. Press Ctrl+C (Windows) or Command+C (Macintosh) to copy the information.
3. Place and click the mouse pointer where you want to paste the information, and press Ctrl+V (Windows) or Command+V (Macintosh).

Displaying Timecode in the Timecode Window

Each monitor has two lines available to display timecode as described in "Displaying Tracking Information" in the Help. In addition, the Timecode window allows you to display up to 48 lines of timecode in a separate window.

When you are working with a 24p or 25p project, you can display additional timecode information in the Timecode window. The output format timecodes TC 24, TC 25, TC 25P, and TC 30 are available from the Timecode menu, as are the source timecodes for clips and subclips.

You need to add the timecode track to the clip or sequence before the timecode tracking formats appear in the Timecode menu. For more information, see Displaying Timecodes in a 24p or 25p Project.

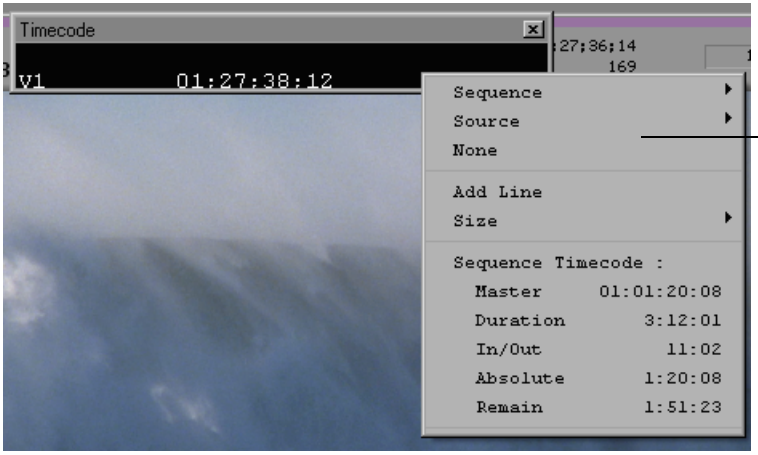
When displaying TC 30 source or M 30 timecodes, the pulldown phase for NTSC reference is displayed.

To set a timecode display:

1. Select Tools > Timecode Window.

   The Timecode window opens.

2. Click anywhere in the Timecode window, and select an option.



   The window displays the timecode you have chosen. The Timecode menu contains the same options as the Tracking Information menu. For a description of the Timecode options, see "Displaying Tracking Information" in the Help.

3. To add an additional line of timecode, click Add Line, then click the new line and select an option.
4. To change the size of the font displayed in the Timecode window, select Size > *font size*.
5. Click the Close button to close the Timecode window.

Adjusting the Play Delay Offset

Your Avid editing application uses a combination of hardware to provide for full audio and video playback capabilities. The use of an OHCI (Open Host Controller Interface) or a 1394 card to input and output DV signals along with the output to a computer's desktop monitor and consumer audio chip could present playback sync issues.

If you do have 1394 selected from the Device menu, the Desktop Play Delay option allows you to adjust the offset between audio and video playback on the Avid system.

With a camera or transcoder connected to your system, when you play a sequence in the Timeline and the Composer (desktop) monitor plays back video and audio ahead of the camera or transcoder, you can adjust this offset. Playback on the Composer monitor can be delayed by the number of frames chosen as an offset so that the video and audio play simultaneously to the camera or transcoder and the Composer monitor.

To adjust the offset:

1. In the Project window, click the Settings tab.

   The Settings list appears.

2. Double-click Video Display.

   The Video Display Settings dialog box opens.

3. Click the Desktop Play Delay slider to increase or decrease the amount of frame offset.

   You might need to readjust the frames a few times to find the correct offset.

Using the Tool Palette

The Tool palette provides additional buttons for editing and navigating with your Avid editing application. The Tool palette buttons can appear with or without labels, and you can "tear off" the Tool palette to display it in another screen location.

You can also map other functions and buttons to the Tool palette for easy access. See "Using the Command Palette" on page 79.

To use the Tool palette:

1. Click the Fast Menu button in the Composer window or on a pop-up monitor.

   The Tool palette opens.

2. Click a button in the Tool palette.

   Your Avid editing application performs the function associated with the button.

To leave the Tool palette open and move it to another location:

1. Click the Fast Menu button in the Composer window or on a pop-up monitor.
2. Click the location where you want the Tool palette to be displayed.

If a subset of the buttons appears in the Tool palette, click the lower right corner and drag it to the right and down to reveal the full Tool palette.

To view the names of the buttons in the Tool palette:

- Move the pointer over a button.

  The name of the button appears in a ToolTip box.

To display labels on the Tool palette buttons:

1. In the Project window, double-click the Interface Setting.

   The Interface Setting dialog box appears.
2. Select Show Labels in Tool Palette.
3. Click OK.

   Labels appear on the buttons under the icons.

Playing Selected Clips in a Loop

You can view several clips one after another in a continuous loop by selecting Bin > Loop Selected Clips. This feature is useful if you want to view several versions of the same scene. While playing the loop, you can jump to the next clip by pressing the Tab key or jump to the previous clip by pressing Shift+Tab.

To play several clips in a continuous loop:

1. Select the clips in the bin that you want to play in a loop.
2. Select Bin > Loop Selected Clips.

   The clips begin playing in the Source monitor from the IN point to the OUT point.
3. Press the space bar to stop the play loop.

If you want to play the clips from start to end, press the Alt key (Windows) or the Option key (Macintosh) while performing this procedure.

Using Locators

Locators are a type of electronic bookmark. They allow you to find and identify specific frames during editing. Keywords that you enter in the comments attached to a locator allow you to use standard Find procedures to call up the clips quickly. You can display information about the locators using the Locators window. For more information about the Locators window, see “Using the Locators Window” on page 335.

There are eight Add Locator buttons in the More tab of the Command palette. Each Add Locator button is a different color, which allows you to group locators by color. For example, you can use the red Add Locator button to identify color correction frames and use the blue Add Locator button to identify cutaway shots.

You can map Add Locator buttons, as described in “Understanding Button Mapping” on page 80.

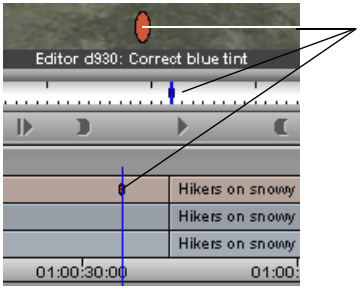
Ways to Use Locators

The following table describes some possible uses for locators and the Locators window:

Use	Description
Color correction notations	Use locators to mark clips or specify frames that require color correction, noting the specific correction to perform if someone else does the job.
Visual track alignments	Use locators at matching points in synchronized audio and video tracks so that if the tracks lose sync, you can visually realign the locators in the Timeline to restore sync. For more information on sync, see “Managing Sync with Multiple Tracks” on page 353.
Music cues	Use locators to mark the IN and OUT points for music.
Trim markers	Use locators in the Timeline to return directly to an edit you have designated for further trimming at a later time.
Cutaway markers	Use locators to identify cutaway shots with comments so that when you return to cover jump-frame edits with cutaway footage, you can quickly call up the shots using basic Find procedures.
Replace markers	Use locators to mark filler segments with comments to identify the items that should replace the filler.
Semi-permanent IN or OUT points	Use locators with the Mark Locators button to put multiple sets of locators on a long clip, and so on.

Use	Description
Add comments for EDLs	Use locators to add comments to sequence clips to appear in lists that you create, such as an EDL or cut list.
Viewing reviewer comments	Use the Locators window to view reviewer comments and the specific frame. See "Using the Locators Window" on page 335.
Print a list of reviewer comments	Use the Locators window to print a list of changes or comments that you can distribute to other people in the production. See "Using the Locators Window" on page 335.
Import and export locators	Import or export locators from one sequence or clip into another sequence or clip. See "Exporting and Importing Locators" on page 338.

When you insert a locator, it appears as an oval in the Timeline, in the position bar, and at the bottom of the frame in the monitor. The color of the oval corresponds to the color of the locator button you used.



You can add locators to your source material while you are in an editing session, as described in "Adding Locators While Editing" on page 332.

Adding Locators While Editing

To add locators and comments while in an editing session:

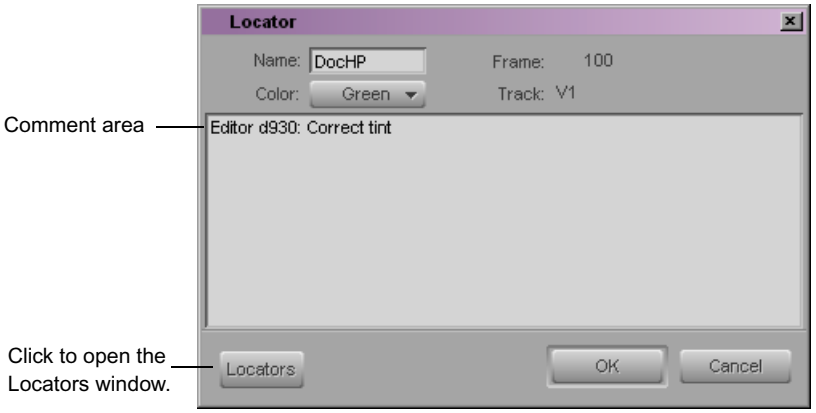
1. Load a clip or sequence.
2. (Option) Select a specific track by using the Track Selector panel.

   See "Using the Track Selector Panel" in the Help.

3. Cue to the frame, and click an Add Locator button. The Add Locator buttons are in the More tab of the Command palette.

   The Locator edit entry window opens. The locator name, color, frame, and track information appear.

The following illustration shows the Locator edit entry window.



By default, the locator name is the user name logged onto your system. You can change this by typing a new name in the Name text box.

4. Type your comments in the comment area of the Locator edit entry window.
5. Change the color from the Color menu or change the locator name.
6. To save your information, click OK, or press the Enter (Windows) or Return (Macintosh) key.

   The information is stored with the marked frame.

   The locator oval appears in the Timeline, in the position bar, and at the bottom of the frame in the monitor.

Finding Locators

To quickly go to a frame with a locator while editing:

- Search for a particular comment by selecting Edit > Find.

Editing Locator Information

You can open the Locator edit entry window directly from a monitor, from the position indicator bar, or from the Locators window. In the Locator edit entry window, you can change the color of a locator, the locator name, or the text of the comment associated with a locator.

To edit Locator information in the Locator edit entry window:

1. Do one of the following:

- Click the oval Locator icon in the Source or Record monitor.
- Double-click the locator in the position indicator bar.
- In the Locators window, right-click (Windows) or Ctrl+Shift+click (Macintosh) a locator item, and then select Edit Locator.

  The Locator edit entry window opens.

2. Do one or more of the following:
   - Select from the Color menu to change the color of the Locator icon.
   - Type a new locator name.
   - Enter new text or update the current text comment.
3. Click OK.

Copying Locators from Source Clips

You can copy all locators currently placed in source clips directly into the sequence as you edit. The locators and the locator text appear in all sequence segments that reference the source clips.

To automatically copy source locators as you edit:

1. Double-click Composer in the Settings tab of the Project window.

   The Composer Settings dialog box opens.
2. Click the Edit tab.
3. Select Copy Source Locators.
4. Click OK.

Marking an Area Using Locators

You can mark the area between two locators by using the Mark Locator button.

To mark the area between two locators:

1. Move the position indicator between two locators.
2.
   Click the Mark Locators button in the Edit tab of the Command palette.

   The area between the two locators is selected.

Moving to the Previous or Next Locator

You can move to a frame marked by a locator by using the Go to Previous Locator button or the Go to Next Locator button.

To move to the previous locator:

- Click the Go to Previous Locator button in the Move tab of the Command palette.

To move to the next locator:

- Click the Go to Next Locator button in the Move tab of the Command palette.

Deleting Locators

You can delete locators using the Delete key, or the Locators window.

To delete a single locator:

1. Select a locator in the Timeline or in the position bar.
2. Press the Delete key.

   The selected locator is removed.

To delete locators using the Locators window, see "Working in the Locators Window" on page 336.

Using the Locators Window

The Locators window allows you to quickly add comments, go to locator marks, copy and paste locators, export and import locators, delete locators, and print a list of locators in the currently loaded clip or sequence. Many features of the Locators window are similar to those of the Bin window.

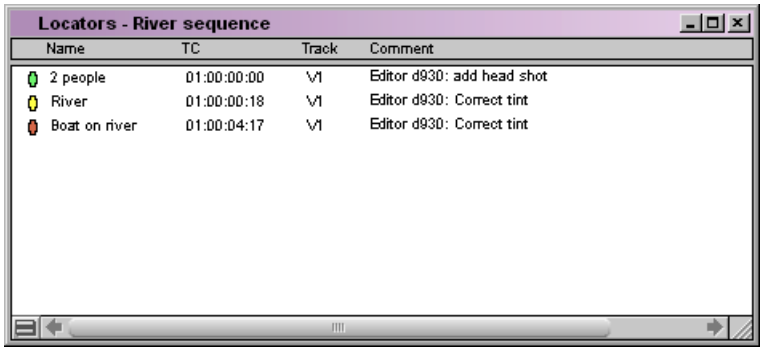
You can use the Locators window to:

- Go to the locator in the sequence or clip.
- Find frame, timecode, and footage information about each locator.
- Modify and sort the display.
- Display frames for easy visual reference.
- Change the color of the Locator icons.
- Delete a single locator or multiple locators.
- Export locators to send out as a review and approval file.
- Print the Locators window.

This is especially useful for identifying and listing specific frames to be used in an effect, for example. You can also make a list of IN and OUT points for adding music.

- Copy and paste locators from one clip or sequence to another.

The following illustration shows a Locators window with three locators.



Viewing Locators in the Locators Window

To view locators in the Locators window:

1. Load the sequence containing the locators.
2. Do one of the following:
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the Source or Record monitor and select Locators.
   - Select Tools > Locators.

The Locators window is monitor specific. If you have selected the Source monitor, the Locators window displays the locators for the clip in the Source monitor. If you have selected the Record monitor, the Locators window displays the locators for the sequence in the Record monitor.

Working in the Locators Window

The following table describes a number of basic procedures that you can perform while in the Locators window, allowing you to select locators, go to the frame marked by a locator, display locator frames or additional information, sort locators, change locator column widths, change locator colors, and delete locators.

Using the Locators window, you can also:

- Export and import locators. For more information, see "Exporting and Importing Locators" on page 338.
- Copy and paste locators. For more information, see "Copying and Pasting Locators Using the Locators Window" on page 339.
- Print the contents of the Locators window. For more information, see "Printing the Contents of the Locators Window" on page 341.

Task	Procedure
To select a locator item:	▶ Click anywhere in the locator item's row except in the Comment column.
To browse through the list of locator items:	▶ Press the Up Arrow and Down Arrow keys.
To go to the frame marked by a locator item:	▶ Do one of the following: Double-click the locator in the Locators window. Right-click (Windows) or Ctrl+Shift+click (Macintosh) the locator, and select Jump to Locator.
To display the frame associated with a locator:	▶ Right-click (Windows) or Ctrl+Shift+click (Macintosh), and select Show Images.
To display a timecode column, a footage column, or a frame number column in the Locators window:	▶ Right-click (Windows) or Ctrl+Shift+click (Macintosh), and select Display > Frame Number, Timecode, or Footage.
To display XML and Trigger columns:	▶ Right-click (Windows) or Ctrl+Shift+click (Macintosh), and select Show MetaSync.
To sort locators:	1. Click the heading of the column that you want to sort. 2. Right-click (Windows) or Ctrl+Shift+click (Macintosh), and select Sort Column (to sort in ascending order) or Reverse Sort Column (to sort in descending order).
To change column widths:	1. Click the heading of the column that you want to resize. 2. Right-click (Windows) or Ctrl+Shift+click (Macintosh), and select Enlarge Column or Reduce Column.
To change the color of a Locator icon:	▶ Right-click (Windows) or Ctrl+Shift+click (Macintosh) the locator icon, select Change Locator Color, and select a color.

Task	Procedure
To delete locators:	1. Click a locator item, or Ctrl+click (Windows) or Shift+click (Macintosh) multiple locator items. 2. Press the Delete key.

Exporting and Importing Locators

You can export locators from a sequence or a clip. A text (.txt) file is created when you export the locator and a tab-delimited file displays all the information about the locator. You can then send the text file to those who need to review and give feedback about the sequence or clip. They can place additional comments in the text file and send it back for you to reimport the locator comments back into your sequence.

You can also import the text file into a spreadsheet program, such as Excel.

You can also use the Locators window to import locators back into your sequence.

For information about creating or editing a locators text file, see "Creating a Locator Text (.txt) File" on page 339.

To export locators:

1. From the Locators window, right-click (Windows) or Ctrl+Shift+click (Macintosh) and select Export Locators.

   A dialog box opens, asking if you want to export only the selected locators or export all locators.

2. Click All or Selected.

   The Choose location for Exported Locators dialog box opens.

3. Type a file name and click Save.

   The locator is saved as a text file (.txt).

To import locators.

1. With a sequence loaded in the Record monitor, right-click (Windows) or Ctrl+Shift+click (Macintosh) and select Locators.
2. From the Locators window, right-click (Windows) or Ctrl+Shift+click (Macintosh) and select Import Locators.

   The Import dialog box opens.
3. Select the tab-delimited file containing the locators you want to import, and then click Open.

Another way to import a locator file is to select the tab-delimited locator file and drag it into the Locators window.

Creating a Locator Text (.txt) File

You can create a Locator text file if you don't have access to an Avid system. This allows you to make timecode-specific comments offline and give them to an editor to import into a sequence. The Locator text file is a tab-delimited file which must be created with certain parameters. This file can be edited in a text editor application or in a spreadsheet program. The Locator text file can be exported from or imported into the Locators window. See "Exporting and Importing Locators" on page 338.

To add comments or information into the Locator text file:

- Type each line of the file using the following syntax:

  `Name<tab>Frame<tab>Track<tab>Color<tab>Comment`

  - These fields are required and must be in the order specified.
  - Enter the color names as follows: `red, green, blue, cyan, magenta, yellow, black, white`
  - Enter the track names as follows: `V1, V2, V3, etc, A1, A2, TC1`

  The following lines are examples:

  `John<tab>203<tab>V1<tab>red<tab>Correct tint`

  `Mary<tab>354<tab>A1<tab>blue<tab>Add voice-over`

Copying and Pasting Locators Using the Locators Window

You can use the Locators window to copy a single locator or multiple locators and then paste them into another clip or a sequence. The copied locator is placed in the same frame position when it is pasted into the new clip. If the frame position does not exist in the new clip, then the paste does not occur.

To copy locators from a clip and paste them into a new clip using the Locators window:

1. Select the locators in the Locators window by doing one of the following:
   - Click a single locator.
   - Ctrl+click (Windows) or Shift+click (Macintosh) multiple locators.
2. Do one of the following:
   - Select Edit > Copy.
   - Press Ctrl+C (Windows) or ⌘+C (Macintosh).
3. Load a new clip in the Source monitor.
4. Click the Locator window and do one of the following:
   - Select Edit > Paste.
   - Press Ctrl+V (Windows) or ⌘+V (Macintosh).

   The locator is pasted into the new clip.

To copy locators from a clip and paste them into a sequence using the Locators window:

1. Select the locators in the Locators window by doing one of the following:
   - Click a single locator.
   - Ctrl+click (Windows) or Shift+click (Macintosh) multiple locators.
2. Do one of the following:
   - Select Edit > Copy.
   - Press Ctrl+C (Windows) or ⌘+C (Macintosh).
3. Load a sequence into the Record monitor or into the Timeline.
4. Click the Locator window and do one of the following:
   - Select Edit > Paste.
   - Press Ctrl+V (Windows) or ⌘+V (Macintosh).

   The locator is pasted into the sequence.

You can also use a text editor to cut and paste locators in the Locators window. This allows you to move locators easily between clips, sequences, tracks, or different users on your system.

To copy and paste locators using the Locators window and a text editor:

1. Select the locators in the Locators window by doing one of the following:
   - Click a single locator.
   - Ctrl+click (Windows) or Shift+click (Macintosh) multiple locators.
2. Do one of the following:
   - Select Edit > Copy.
   - Press Ctrl+C (Windows) or ⌘+C (Macintosh).
3. Open a text editor application, and paste the selection into the document.

   The locator information displays in the text document.

Timecode, clip data, color, locator identification, and comments are all associated with a locator entry. You can edit the entries before pasting them into a new clip or sequence using the Locators window, or you can save the locator information as a text file and distribute it as needed.

Printing the Contents of the Locators Window

You can print the complete contents or the current view of the Locators window.

If you select Show Images to display the frame associated with each locator and you want to print the frames, you must use the procedure for printing the current view of the Locators window. Printing the complete contents does not print the frames.

To print the current view of the Locators window:

1. Make sure your printer is correctly set up.
2. Expand the view of the Locators window to display the information you want to print.
3. Select File > Page Setup.

   The Page Setup dialog box opens, reflecting the specific options for your printer.
4. Select the Page Setup options.
5. Click OK.
6. Select File > Print.

   The Print dialog box opens, reflecting the specific options for your printer.
7. Select the Print options.
8. Click OK (Windows) or Print (Macintosh).

   The system prints the current view of locator information.

To print the complete contents of the Locators window:

1. Make sure your printer is correctly set up.
2. Click the Locators window to make it active.
3. Press Ctrl+Alt+P (Windows) or Command+Option+P (Macintosh) to place the locator information in the Console window.
4. Select Tools > Console.

   The Console window opens.
5. Select File > Page Setup.

   The Page Setup dialog box opens, reflecting the specific options for your printer.
6. Select the Page Setup options.
7. Click OK.
8. Select File > Print.

   The Print dialog box opens, reflecting the specific options for your printer.
9. Select the Print options.
10. Click OK (Windows) or Print (Macintosh).

    The system prints the locator information displayed the Console window.

Chapter 10

Creating and Editing Sequences: Advanced

After you have viewed and marked your clips or created subclips, you are ready to create a sequence.

The following topics describe advanced procedures that you use when creating and editing sequences:

- User Preferences for Creating Tracks
- Using Phantom Marks
- Adding Comments to Sequence Clips
- Playback Performance Tips
- Playing a Limited Duration of a Sequence
- Autosyncing Clips
- Using the AutoSequence Command
- Resyncing Subframe Audio
- Managing Sync with Multiple Tracks
- Ganging Footage in Monitors
- Using Sync Point Editing
- Synchronizing Metadata Using MetaSync

For basic information about editing, see “Creating and Editing Sequences: Basics” in the Basics Guide for your Avid editing application.

For information on editing with remote assets in an Avid Interplay environment, including editing with in-progress clips captured using Frame Chase capture capabilities, see “Editing with Remote Assets” in the Help.

User Preferences for Creating Tracks

Your Avid editing application provides two options in the Edit tab of the Composer Settings dialog box that help automate the way tracks are created and enabled as you edit. You can adjust these settings in advance, based on personal preference.

For information on opening and changing settings, see “Using the Settings List” in the Help.

The default settings are:

- **Auto-create New Tracks:** Whenever you edit new source material from the Source monitor, the system automatically creates any new tracks in the sequence that match enabled tracks on the source side.
- **Auto-enable Source Tracks:** Whenever you load new source material into the Source monitor, the system automatically enables all existing source tracks.

Alternatively, you can do the following:

- Deselect the Auto-create New Tracks option to have the existing tracks in the sequence remain the same when you edit in new source material. This allows you to create new tracks selectively as you edit, which is often preferable at the more advanced stages of a project.
- Deselect the Auto-enable Source Tracks option to leave the tracks of newly loaded material in whatever state they were in when they were last loaded. This allows you to turn on the source tracks more selectively as you edit, which is often preferable at the more advanced stages of a project.

Using Phantom Marks

Phantom marks provide visual guidance when editing according to the three-mark rules. For information on editing using three marks, see “Editing Additional Clips into the Sequence” in the Help.

To enable phantom marks:

1. Double-click Composer in the Settings list of the Project window.

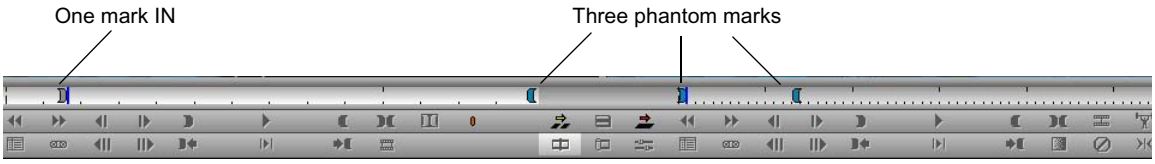
   The Composer Settings dialog box opens.

2. Select the Phantom Marks option in the Edit tab.
3. Click OK.

When you enable phantom marks, the system displays blue mark IN or mark OUT icons in the position bars below both the Source monitor and the Record monitor. These phantom marks can indicate one, two, or sometimes three edit points calculated by the system to complete an edit. The following are sample scenarios.

Setting One Mark

In this example, you set only the mark IN on the source side. By default, the system uses the location of the position indicator as the mark IN for the sequence and calculates both OUT points based on the length of the source clip.



You can see the system calculations instantly and can make the edit after setting just one mark, when appropriate.

Adding a Second Mark

If you decide that a mark OUT is required — to shorten the source clip, for example — then the system recalculates and displays new phantom marks.

Phantom marks can help you see the results of marks you set before you complete the edit and are especially useful when doing Sync Point Editing or other complicated replace edits in which two or more marks are calculated automatically.

Adding Comments to Sequence Clips

You can add comments to sequence clips. These comments also appear in the Timeline or in lists that you create, such as an EDL or a cut list. Comments can include instructions for color correction or for adjusting an effect.

To add comments to the clips in a sequence:

1. Click one of the Segment Mode buttons (located below the Timeline), and highlight the clip to which you want to add a comment in the Timeline.

2. Click the Clip Name menu above the monitor, and select Add Comments.

   The Comments dialog box opens.

3. Type your comments in the text box, and click OK.
4. Click one of the Segment Mode buttons again to leave Segment mode.

To display comments in the Timeline:

- Click the Timeline Fast menu button, and select Clip Text.

Playback Performance Tips

As you continue to edit, you might find the playback performance of the system diminishing as the sequence grows in length and layers. This can happen when you are using a great deal of system memory for playback of large and complex sequences. The following are a few tips for improving playback performance:

- Check the number of media objects in use for your project in the Memory window, as described in "Viewing Memory" on page 49. If this number is large, reduce the number of media objects by doing one of the following:
  - Close bins that are not in use.
  - Reduce the number of clips in the open bins.
  - Unmount drives that are currently not in use. See "Mounting and Unmounting Drives" in the Help. You can remount the drives at any time by selecting File > Mount All.
- When displaying real-time effects, adjust the video quality as described in "Optimizing Your Playback Performance" in the Help.
- Restart the computer once a day to refresh the system memory.
- Split the sequence into two or more segments, if possible.

Playing a Limited Duration of a Sequence

Long sequences with many effects can be time-consuming to work with in the Timeline. Working with a shorter sequence can save time. The Play Length Toggle feature allows you to switch between playing the entire sequence and playing a limited duration centered around the current position of the sequence. When you use the Play Length Toggle feature, the Play button and Play Length Toggle button change to white.

To play a limited duration of a sequence:

1. Map the Play Length Toggle button from the Play tab of the Command palette, for example, to a monitor toolbar button.

   For information about mapping buttons, see “Understanding Button Mapping” on page 80.

2. Move the position indicator to the location where you want to start playing the sequence.
3. Click the Play Length Toggle button.

   The Play button and the Play Length Toggle button change to white, indicating the Play Length Toggle feature is active.

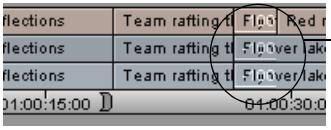
4. Click the Play button.

   The sequence plays for the default Play Length, which is 1 minute.

5. To set the Play Length back to play the entire sequence, click the Play Length Toggle button again.

Autosyncing Clips

When you capture footage that includes both audio and video, your Avid editing application automatically establishes sync when it creates clips in the bin. *Autosyncing* applies to audio and video clips that are captured separately, usually from two separate sources. Autosyncing creates a new subclip that displays sync breaks in the Timeline as though the audio and video were captured simultaneously.



For more information on tracking sync breaks, see "Displaying Sync Breaks" in the Help.

Understanding Autosyncing

Autosyncing is often used for 24p and 25p projects in which picture and sound were captured separately. These clips are often synced based on common film timecode, sound timecode, or auxiliary timecode.

You can also autosync™ any audio and video clips based on a user-defined IN point or OUT point relationship that you establish with marks. For example, you can use the slate as a common visual and audio reference for autosyncing the clips.

Use the following guidelines when autosyncing:

- You can autosync audio clips with video clips only. To link two or more video clips or audio clips, use the Grouping option described in "Understanding Grouping and Multigrouping Clips" on page 589.
- You can create only one autosynced subclip at a time. You cannot autosync numerous pairs of audio and video clips simultaneously.
- If the audio and video clips do not have matching source or auxiliary timecode, you must establish common sync frames. To do this, mark IN points (or OUT points) on both clips before autosyncing. When you autosync using this method, the whole clip is taken into the subclip.
- If you are autosyncing clips of different lengths, the longer clip is truncated to the length of the shorter clip; video clips override audio clips.
- If you autosync according to common timecodes that are staggered (one clip starts later than the other), the later starting timecode becomes the start of the new subclip. The clip with the earlier starting timecode is trimmed accordingly.

Creating an Autosynced Subclip

To create an autosynced subclip:

1. Highlight the two clips in the bin.
2. Select Bin > AutoSync.

   The Sync Selection dialog box opens.
3. Select an option, based on the following:
   - **Film TC/Sound TC**, if you are syncing clips with matching film and sound timecode recorded in the field. This option appears dimmed if you are not working on a 24p or 25p project.
   - **Inpoint***s*, if you are syncing according to IN points set in both clips.
   - **Outpoints**, if you are syncing according to OUT points set in both clips.
   - **Source Timecode**, if the two clips have matching timecode.
   - **Auxiliary TC1–TC5**, if the two clips have matching timecode in the same Auxiliary Timecode column. Select an Auxiliary TC, 1 through 5, from the menu.
4. Click OK.

   The subclip is created and named by default after the video clip with the file name extension .sync.*n*, where *n* is the incremental number of subclips created with the same name.

You can change the name according to preference. You can load an autosynced subclip into the Source monitor and immediately edit it into a sequence.

Using the AutoSequence Command

AutoSequence is used with 24p and 25p projects in which picture and sound are captured separately. AutoSequence allows you to add audio to the original videotape if it was transferred without sound.

Understanding AutoSequence

You can use the AutoSync command to create synchronized subclips of the video and audio. You can then use AutoSequence to build a sequence with timecode that matches your original videotape.

For information and procedures for Autosync, see "Autosyncing Clips" on page 348.

To establish syncing with the original videotape, filler is added where gaps in audio exist in the sequence. After you finish editing the audio, use the Digital Cut command to output only the audio onto the original videotape. The videotape now has synchronized audio and video for viewing.

If you do not use AutoSync and the video clip timecode does not match the audio clip timecode, you should select only video clips when you use AutoSequence. You can then add audio to the sequence and sync the audio with the video by using the Splice-in and Overwrite functions.

Use the following guidelines when creating a synchronized sequence:

- Your original videotape must have continuous timecode.
- Use only master clips, subclips, autosynced subclips, and/or group clips to create the synchronized sequence.
- If you select two unrelated clips with overlapping timecodes, a message box indicates you cannot do this operation. If the clips are related (for example, one clip is a subclip of the other master clip), then one of the clips is selected automatically.
- Any points in the clips are removed and ignored. A message box opens, providing you with a choice to continue and remove the points or to cancel the operation.
- Synchronized sequences are named from the Tape Name column.

Adding Audio to Original Videotape Using AutoSequence

To add audio to your original videotape:

1. Create synchronized subclips from the videotape's master clips and your audio clips by using the AutoSync command.
2. Open the bins that contain the autosynced subclips.
3. Select the subclips that you want to include in the sequence.
4. Select Bin > AutoSequence.

   A synchronized sequence is created that contains the clips you selected.

   The new sequence appears in the Record monitor and in the Timeline. The sequence is also placed in the bin with the same name as the videotape.

5. Edit the audio tracks.
6. Record a digital cut of the audio directly onto the original videotape when you finish editing the sequence.

Make sure the video tracks are not enabled when you begin recording a digital cut.

You can build a sequence without filler by pressing and holding the Alt key (Windows) or Option key (Macintosh) while you select Bin > AutoSequence.

Resyncing Subframe Audio

When you are working with a 24p or 25p project (35mm, 4-perf or 35mm, 3-perf only), you can adjust the sync between the audio and video portions of subclips at the *subframe* or perforation level (1/4-frame adjustments for 4-perf and 1/3-frame adjustment for 3-perf) for more exact sync.

Understanding Subframe Resyncing

When you perform a subframe resync, you can obtain a closer relationship between audio samples and film frames than the relationship established in the film-to-tape transfer process. For example, when a film lab punches the correct clapsticks frame to match the audio clap, during telecine transfer, the process of aligning the sync points is inexact. As a result, true sync might be off by one or more perforations.

The following conditions apply to resyncing at the perforation level:

- You can adjust the sync between a single video and a single audio track within subclips only. Use the subclips created:
  - When you autosync
  - Manually from master clips in preparation for editing
  - From an imported shot log
  - During capturing
  - From imported audio media (OMFI, AIFF-C, or WAVE format), master clips generated by AudioSuite plug-ins, or tone generator media
- You cannot slip at the perforation level of the imported QuickTime audio media.
- You cannot slip at the perforation level of the audio clips from Media Composer Adrenaline. You must import the audio media as a new clip.

The batch import process does not create new clips; therefore, slipping at the perforation level is not available when you batch import audio clips from Avid application versions earlier than v10.5.3.

- You cannot slip beyond the duration boundaries of the source master clip.
- The sync adjustments you make are referenced in any cut list you output for any sequence that uses the adjusted subclip.
- The number of perfs you slip appears in the Slip column of the project bin when the Slip heading is selected for display in the bin.

Resyncing Audio for a Selected Subclip

To resync audio for a selected subclip:

1. Load the subclip into the Source monitor.
2. Use one of the audio scrub techniques described in "Using Audio Scrub" in the Help to locate the closing slate frame.
3. Turn on the Audio Waveform display by clicking the Timeline Fast Menu button and selecting Audio Data > Energy Plot or Sample Plot.

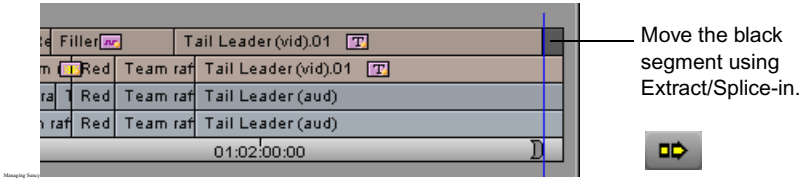
4. Click the Toggle Source/Record in Timeline button in the Timeline toolbar to display a Timeline for the subclip.
5. Zoom in on the area of the subclip that contains the audio slate frame as follows:
   a. Click the Timeline Fast Menu button, and select Zoom In.
   b. Draw a box around the slate-frame area.

6. Move the audio sync either backward or forward in 1-perf increments by clicking the Slip Left One Perf or Slip Right One Perf button.

   Each click of the perf button performs the sync adjustment.
7. Play the subclip in the Source monitor to evaluate your sync adjustment. Repeat the steps above to further adjust the sync, up to eight perfs in either direction.

8. Use the resynced clip to edit into the sequence.

If you find a subframe sync problem within an edited sequence, be sure to correct the audio sync in the original subclip used in the edit. The sequence is then updated. For sync problems with 16mm format, the telecine facility must correct the problem.

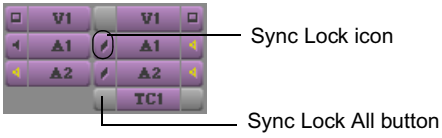


Managing Sync with Multiple Tracks

Displaying sync breaks in the Timeline makes it easy to manage sync between video and one or two audio tracks. You can use additional techniques to manage sync when you work with four or more tracks. The techniques include using the Sync Lock feature, syncing with tail leader, syncing with locators, and using add edits

Using Sync Lock

The Sync Lock feature allows you to maintain sync among several tracks while adding, moving, trimming, or removing material in a sequence. For example, if you insert an edit into one track that is sync locked to a second track, the system automatically inserts filler in the second track to maintain sync between the two.



You activate sync locking by clicking a Sync Lock button in the Track Selector panel to display the Sync Lock icon. You can also switch all sync locks on or off by clicking the Sync Lock All button.

There are several unique aspects to sync locking:

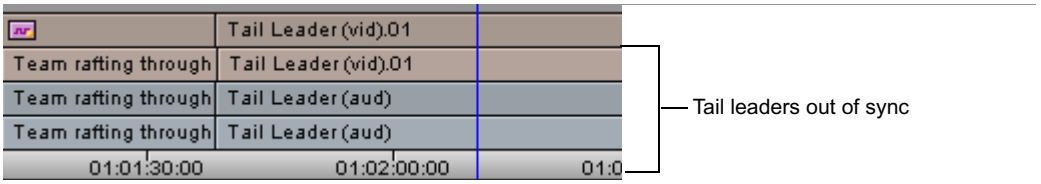
- In Segment mode, sync locking is controlled by the Segment Drag Sync Locks option in the Edit tab of the Timeline Settings dialog box and the Sync Lock icons in the Timeline. For more information on sync locking tracks in Segment mode, see "Maintaining Sync in Segment Mode" in the Help.
- In Trim mode, sync locking applies only to single-roller trims because dual-roller trims do not break sync. For more information on sync locking tracks in Trim mode, see "Maintaining Sync While Trimming" on page 386.
- You can sync lock any number of tracks in any combination. The tracks do not require matching timecode or common sources and can include multiple video tracks as well as audio tracks.
- Sync locking affects entire tracks. This means that parallel segments in other sync-locked tracks are affected when you add, move, trim, or remove material anywhere in the sequence.

Syncing with Tail Leader

You can add tail leader to the audio or video material to provide a useful visual reference in the Timeline for tracking and fixing sync breaks across any number of tracks.

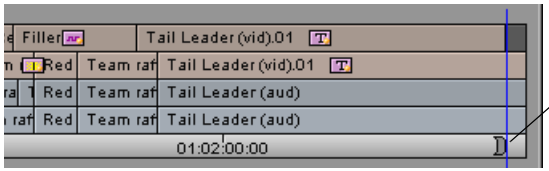
Film editors traditionally use standard head and tail leaders for this purpose. You can create your own leader according to any specification, as described in "Creating Leader" on page 249.

With tail leader added to synchronized tracks, you can go to the end of the sequence after making a complicated edit and see whether the leaders are lined up. If they are out of line, this indicates a sync break that you can measure and eliminate.



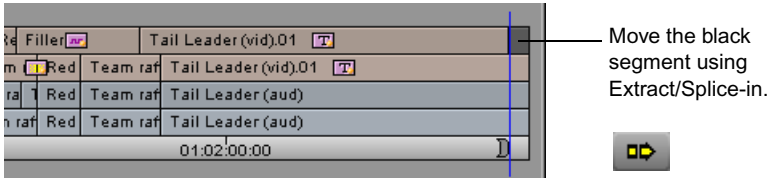
To eliminate a sync break when the leaders do not line up:

1. Move the position indicator to the black segment that follows the out-of-sync leader.
2. Select the track, and then click the Mark Clip button. You can measure the break by checking the IN to OUT duration of the marked segment.



3. Find the point at which the sync was lost.
4. Add or remove frames by using the appropriate edit function, as described in “Fixing Sync Breaks” in the Help.

As a quick fix, you can enter Segment mode by clicking the Extract/Splice-in (yellow arrow) button. Drag the black segment at the end of the out-of-sync tail leader to the location where the sync was lost. This segment of black, created when the track went out of sync, is the exact length of the sync break.



Syncing with Locators

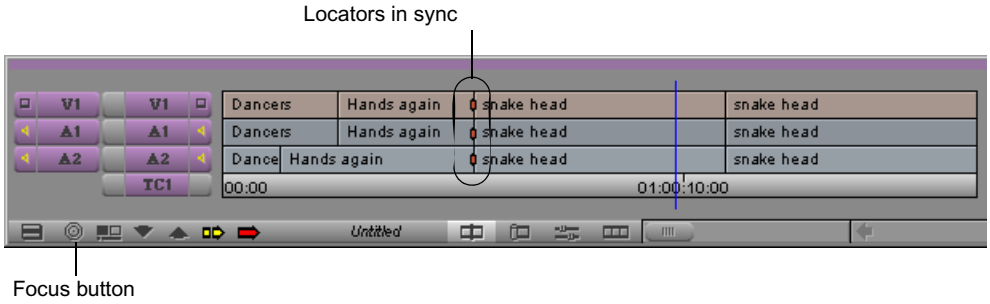
Like tail leaders, you can add locators to material in the Timeline to track and adjust breaks in sync between any number of tracks. You can place locators anywhere in the sequence and you can add specific notes.

For more information on using locators, see “Using Locators” on page 331.

To mark sync points with locators:

1. Move the position indicator to the point in the sequence where you want to maintain sync between two or more tracks.
2. Select all tracks where you want the locators to appear.
3. Click an Add Locator button.

   The system adds a locator to the enabled tracks in the Timeline and in the Record monitor.



To add a note that appears in the Record monitor whenever you park on the locator frame (such as Music sync or Sound Effect sync):

1. Double-click the locator in the Record monitor.
2. Type your comments in the comment entry area of the Locator window.

To determine if sync is broken after an edit:

- Return to the segment that contains the locators and click the Focus button.

  If the locators are not lined up, the sync is broken.

You can use the Find procedure to go to a locator quickly with text. For more information, see “Finding Frames, Clips, and Bins” in the Help.

To adjust the sync break:

1. Measure the sync break by first moving the position indicator to the leftmost locator and clicking the Mark IN button. Then move it to the other locators, and click the Mark OUT button.
2. Check the IN to OUT duration of the marked section.

To restore sync:

1. Find the point at which the sync was lost.
2. Add or remove frames by using the appropriate edit function, as described in “Fixing Sync Breaks” in the Help.

Using Add Edit When Trimming

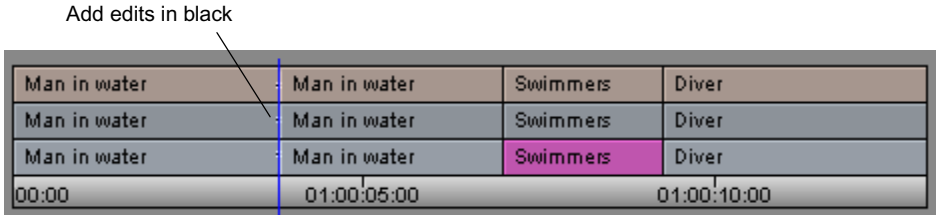
When trimming with several audio tracks in sync, you can use the Add Edit button to create an edit in the silent or black areas of the synced tracks. They occur in line with the track you are trimming, and they trim all the tracks at once to maintain sync.

You can also add an edit to filler. For more information, see “Adding Edits to Filler Clips” on page 373.

To use the Add Edit button while trimming:

1. Move the position indicator to the edit that you want to trim.
2. Select only the additional tracks that are in sync, and click the Add Edit button.

   The system adds a transition at the location of your position indicator in the Timeline.



3. Select the transition and trim (be sure to select all the synced tracks).

   As you trim, frames are added or removed from the additional tracks as well.
4. When you are finished trimming, remove the add edits from the sync tracks by selecting Clip > Remove Match Frame Edits.

Ganging Footage in Monitors

The Gang function does not combine tracks into a synced relationship but locks monitors in sync so that you can move through footage in two or more monitors simultaneously. This function is convenient for viewing and marking the sequence and source material simultaneously, based on syncing of the position indicators in each monitor.

You can gang the Source monitor and any number of pop-up monitors with the Record monitor. For instance, before editing them into a sequence, you can gang a music track in a pop-up monitor, source footage in the Source monitor, and a sequence in the Record monitor. Then you can view the footage, adjust the sync points, and mark them before completing the edit.

To gang footage in monitors:

1. Load a sequence into the Record monitor.
2. Load one or more clips into the Source monitor and pop-up monitors.
3.
Click the Gang button for each monitor that you want to synchronize (the Record monitor is always ganged).

   The button changes to green when the function is enabled.

The Gang button appears by default in the second row of buttons below the monitors and in the second row of information above the Source and Record monitors.

4. View the footage in any of the monitors using standard playback methods.

   As you move through footage in one monitor, the footage in all other monitors freezes. The footage is updated when the play stops. Simultaneous full-motion playback is not possible, although sync is maintained at all times.

Using Sync Point Editing

Sync Point editing allows you to overwrite material onto your sequence in such a way that a particular point in the source material is in sync with a particular point in the sequence. For example, you can sync an action in the source video with an audio event, such as a musical beat in the Record monitor, and then edit it so that the action occurs on the beat.

Like a replace edit, Sync Point editing uses the relative location of the position indicator in both the source and record material as the sync point. Sync Point editing, however, determines the duration of the new edit according to marks that you set, as opposed to a replace edit, which uses the head-to-tail frame duration already established in the Timeline. You can apply these marks across multiple tracks when marking a sequence. This allows you to add overlap cuts.

Sync Point Editing requires two pieces of information:

- **Sync points:** These are the points where the synchronized relationship between the source and record material is established.
- **Duration of the relationship:** This is determined by the positions of the head and tail frames (and sometimes by the position indicator). Both marks are in one monitor, or one mark is in one monitor and the other mark is in the other monitor. The duration of the material being edited into the sequence is sufficient for the size of the edit.

To perform a sync point edit:

1. Load a clip or sequence into the Source monitor.
2. Load a sequence into the Record monitor.
3. Mark the material in one of the following ways:
   - Mark the IN and OUT points in either the Source or Record monitor, leaving the opposite monitor clear of marks.
   - Mark an IN or OUT point in the Source monitor, or an IN or OUT point in the Record monitor. For example, if you marked an IN point in the Source monitor, mark the OUT point in the Record monitor.
4. Move the source position indicator to the sync frame in the clip. This establishes the source sync point.
5. Move the record position indicator to the sync frame in the sequence.
6. Select Sync Point Editing (Overwrites) in the Edit tab of the Composer Settings dialog box or select Special > Sync Point Editing.

   The orange mark on the Overwrite button signals Sync Point Editing is active.
7. Select the source and record tracks for this edit. Click the Overwrite button.

   The sync point edit is completed.

To turn off Sync Point Editing, do one of the following:

- Deselect Sync Point Editing (Overwrites) in the Edit tab of the Composer Settings dialog box.
- Deselect Special > Sync Point Editing.

Synchronizing Metadata Using MetaSync

Avid MetaSync gives editors the tools to synchronize metadata with traditional video and audio content. With MetaSync, you can insert pointers to metadata directly into the Timeline and easily modify the timing and duration of the enhanced material. The metadata, in turn, point to additional content, such as files from a scriptwriting program, closed captioning, HTML files, database records, machine controls, or remote commands. Other applications can then process this additional content for final production and distribution, opening new opportunities for content creation in the emerging areas of ITV (interactive television), DVD, broadband, and converging media.

For more information, see “MetaSync Overview” in the Help.

Chapter 11
Using the Timeline: Advanced

Your Avid editing application represents each edit and effect in a graphical timeline structure to help you track and manipulate the elements of your sequence. The Timeline continuously updates as you work, displaying an extensive array of icons and information that you can customize in various ways. In addition, the Timeline has its own set of editing tools that you can use to create and revise edits and transitions across multiple tracks.

The following topics provide advanced information on using the Timeline:

- Timeline Views: Advanced
- Navigating in the Timeline: Advanced
- Using Advanced Timeline Techniques
- Adding an Edit (Match Framing)
- Detecting Duplicate Frames
- Adjusting Handle Length in Dupe Detection
- Tracking Color Frame Shifts
- Finding Black Holes and Flash Frames
- Printing the Timeline

For basic information about the timeline, see “Using the Timeline: Basics” in the Help or the Basics Guide for your Avid editing application.

Timeline Views: Advanced

You can customize your view of the Timeline to display a variety of information about your sequences and clips. This allows you to set up a Timeline view that works more efficiently for you.

Displaying the Timeline Top Toolbar

You can display a top toolbar in the Timeline for easy access to editing buttons. You can also map additional buttons to the Timeline top toolbar. For information about mapping buttons, see "Mapping User-Selectable Buttons" on page 81.

You can choose to show or hide the Timeline top toolbar.

To show the Timeline top toolbar:

1. In the Project window, double-click the Timeline Setting.

   The Timeline Settings dialog box opens.

2. Select Show Toolbar in the Display tab.
3. Click OK.

To hide the Timeline top toolbar:

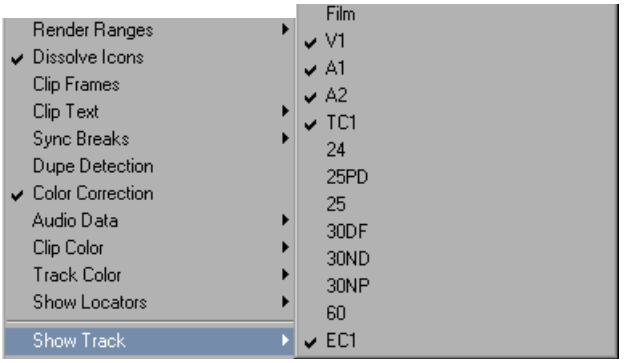
- Deselect Show Toolbar, and then click OK.

Displaying Timecode Tracks in the Timeline

When you are working with 24p or 25p projects (PAL with pulldown), you can display separate tracks for 24, 25, 25P, and 30 timecodes in the Timeline. You can also display an edgecode track in the Timeline. By default, the Timeline displays all the tracks. You can hide the timecode tracks by deselecting them in the Show Track submenu of the Timeline Fast menu.

To customize the tracks to be displayed in the Timeline:

- Click the Timeline Fast Menu button, and select Show Track > *tracks*.



The TC1 track represents the timecode of the project in which you are working. For example, when you are working in a 24p NTSC project, the TC1 track displays the same timecode as the TC30 track.

Assigning Local Colors to Clips in the Timeline

You can assign local colors to clips in the Timeline to indicate clips that should be grouped together.

To assign a local clip color:

1. Click one of the Segment Mode buttons, and select a clip.
2. Click the Timeline Fast Menu button, and select Clip Color > Local.

A check mark indicates that Local is active.

3. Select Edit > Set Local Clip Color > *color*.
4. Click the Segment button.

The assigned local color appears in the clip in the Timeline.

For information on how to assign colors to mixed-format clips in the Timeline, see “Highlighting Clips in a Mixed-Format Timeline” in the Help.

Displaying Local and Source Colors in the Timeline

You can display source colors and local colors for clips in the Timeline. Source colors are assigned to clips in bins and local colors are assigned to clips in the Timeline. By default, the Timeline is set to display no colors.

Displaying source colors and local colors overrides any track color assigned from the Timeline Fast menu.

To display source colors in the Timeline:

- Click the Timeline Fast Menu button, and select Clip Color > Source.

  The source colors assigned to clips in the bin appear in the Timeline.

Clip colors assigned to sequences, groups, motion effects, and title clips do not appear as source colors in the Timeline.

To display local colors in the Timeline:

- Click the Timeline Fast Menu button, and select Clip Color > Local.

  The local colors assigned to clips appear in the Timeline.

If both Source and Local are selected in the Clip Color submenu, the local color overrides the source color.

Changing the Timeline Background Color

To change the background color of the Timeline:

1. Deselect all the tracks in the Timeline.
2. Click the Timeline Fast Menu button, and select Background Color > *color*.

The Background Color command appears only when all tracks are deselected.

Changing the Timeline Track Color

To change the color of the selected tracks in the Timeline:

1. Click in the Timeline to activate it.
2. Select the tracks whose color you want to change.
3. Click the Timeline Fast Menu button, and select Track Color > *color*.

If you want to choose a custom color for the tracks, press the Alt key (Windows) or Option key (Macintosh) while performing this procedure. When you release the mouse button on the color palette, the Windows Color dialog box or the Macintosh Colors panel opens.

Showing Locators in the Timeline

When you add locators to a sequence, the locators are displayed in the Timeline. You can modify which locators are displayed in the Timeline by selecting Show Locators from the Timeline Fast menu. When you select a color from the Show Locators submenu, only locators of that color appear in the Timeline. You can select All from the Show Locators submenu to display all the locators, or you can select None to prevent any locators from being displayed in the Timeline.

Show Locators affects only how the locator icons are displayed in the Timeline. The locators are not affected.

To change the display of locators in the Timeline:

1. Load a sequence that contains locators into the Record monitor.
2. Click the Timeline Fast Menu button, select Show Locators, and then select the colors of the locators you want to display in the Timeline.

   The Timeline displays only those locators with the colors you selected.

Navigating in the Timeline: Advanced

The Timeline window provides various controls for quickly moving through a sequence and adjusting your view of details displayed in the tracks while editing.

Using the Full-Screen Timeline

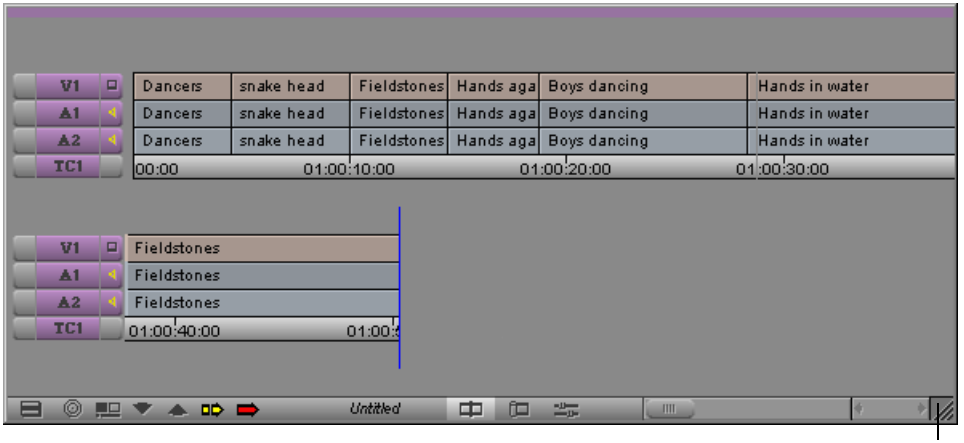
As an alternative to constantly scrolling through the Timeline window or resizing tracks to get a view of the material, you can resize the Timeline window to full-screen display. You can also enlarge the tracks to view complex audio or video layers in greater vertical detail.

A Timeline with reduced tracks wraps around to show more of the sequence. As you reduce tracks in a full-screen Timeline, the sequence wraps around, allowing you to examine a long sequence in greater horizontal detail.

To resize the Timeline window:

- Click the Resize box at the lower right corner of the window, and drag it.
- (Macintosh only) Click the Maximize button in the top right corner of the window.

  The Timeline expands to full-screen size.



To restore a resized Timeline window to its default position:

- Click the Timeline and select Windows > Home.

To control whether the Timeline wraps around in the Timeline window:

- Click the Timeline Fast Menu button, and select Wrap Around.

To enlarge tracks:

- Select the tracks, and press Ctrl+L (Windows) or ⌘+L (Macintosh).

To reduce tracks:

- Select the tracks, and press Ctrl+K (Windows) or ⌘+K (Macintosh).

You can also continue to work in Source/Record mode by resizing the Timeline window so that it overlaps the Composer window.

You can click in either window to activate it and bring it forward at any time, or you can click in the title bar of the Timeline window and drag it to the Bin monitor to place each window in its own monitor.

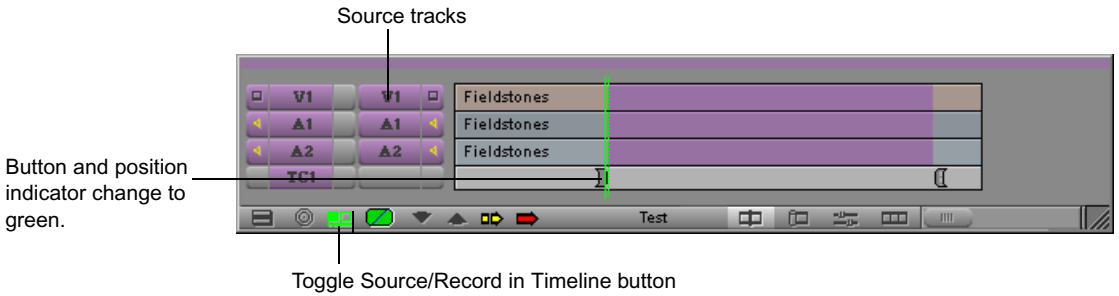
If the Timeline or Composer window is hidden behind another window, select the window again from the Tools menu.

Displaying Source Material in the Timeline

The Toggle Source/Record in Timeline button allows you to view multitrack source material quickly in the Timeline for selecting and marking specific tracks.

By default, the Timeline displays only the available tracks for source material.

When you click the button to display the source material, both the button and the position indicator turn green to indicate that you are viewing source material.

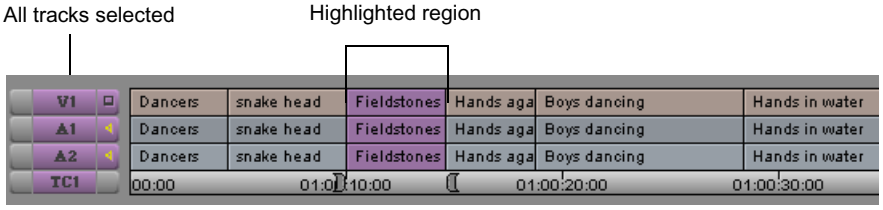


This feature is particularly useful when you are editing with a sequence or subclip created from a sequence; you can also use it to look at the contents of any source clip in a Timeline display.

Heads and Tails view is disabled when you are displaying material from the Source monitor.

IN to OUT Highlighting in the Timeline

When you mark a sequence with IN to OUT points, the system indicates the selection by highlighting the marked region in the Timeline. Only selected tracks are highlighted.



This visual guide helps you monitor track and segment selection more carefully when mixing or applying effects across multiple tracks and segments.

To turn the highlighting feature on and off:

- Select the Show Marked Region option in the Display tab of the Timeline Settings dialog box.

Using Advanced Timeline Techniques

There are several advanced techniques for displaying and editing in the Timeline that you can use in any combination, including:

- Bin Editing into the Timeline
- Bin Editing Directly into a Sequence Using the Keyboard
- Editing with the Film Track
- Editing in Heads or Heads Tails View
- Performing a Quick Edit Using the Top and Tail Commands

Bin Editing into the Timeline

You can use Segment mode to edit clips directly from a bin into the sequence in the Timeline. Bin editing allows you to bypass the process of loading clips into the monitor, setting marks, and clicking the Splice-in button or Overwrite button.

For information on editing multiple clips directly from the bin into the Record monitor, see “Creating an Instant Rough Cut” in the Help.

To perform a direct edit from a bin into your Timeline:

1. For a more accurate edit, mark IN and OUT points for each clip or create subclips, as described in “Marking and Subcataloging Footage” in the Help. Otherwise, the entire clip is edited into the sequence.
2. Click one of the Segment Mode buttons:

- Lift/Overwrite (red) acts as an overwrite edit, causing the clip to overwrite material of the same length in the sequence while maintaining the same duration of the sequence.

- Extract/Splice-in (yellow) acts as a splice edit, inserting the clip into the sequence, moving existing material down, and lengthening the total duration.

3. Drag a clip from the bin into the Timeline. You can edit only one clip at a time.

   The pointer changes to the selected Segment mode icon, and the interface changes to the four-frame monitor display. As you drag, a white outline of the clip indicates the segment position.

4. When you find the right placement for the clip, release the mouse button.

   The Timeline reflects the new edit.

After the edit is completed, you remain in Segment mode until you click the active Segment Mode button again to deactivate it.

Bin Editing Directly into a Sequence Using the Keyboard

Bin editing allows you to bypass the process of loading clips into the monitor, setting marks, and clicking the Splice-in button or Overwrite button. You can use keyboard shortcut keys to edit clips directly from a bin into the sequence in the Timeline.

To perform a direct edit from a bin into a sequence:

1. Activate bin editing:
   a. Double-click Bin in the Settings list in the Project window.
   b. Select the “Enable edit from bin (Splice, Overwrite)” option.
   c. Click OK.
2. Mark an IN or OUT point in the Timeline, or move the position indicator to the location where you want the clip to appear.
3. Select a clip in the bin.

   The entire clip is edited into the sequence, unless you have marked IN and OUT points.

4. Do one of the following:
   - Press the V key to perform a splice-in edit, which inserts the clip into the sequence and moves existing material down, lengthening the total duration of the sequence.
   - Press the B key to perform an overwrite edit, which causes the clip to overwrite material of the same length in the sequence while maintaining the same duration of the sequence.

   The Timeline reflects the new edit.

Editing with the Film Track

You can use the film track to examine each frame of the sequence in a linear display, much as you would when looking at a strand of film on a flatbed or workbench. Unlike your view of the footage in the monitors, that display one frame at a time, the film track within the Timeline allows you to compare individual frames side by side within a range of frames.

To display the film track:

- Click the Timeline Fast Menu button, and select Show Track > Film.

A row of film frames appears at the top of the Timeline. The film track displays as many representative frames as possible within the window.

To adjust your view of the Timeline quickly for frame-by-frame viewing and editing:

- Click the Timeline Fast Menu button, and select Show Every Frame.

The film track displays frames for the topmost video track only. You cannot display more than one film track at a time.

To quickly view more frames as you scroll:

- Drag the resize box in the lower right corner of the Timeline for a full-screen view. You can reduce the size of Timeline tracks to wrap the sequence around several times.

  As you continue to scroll, each strand of the Timeline wraparound is updated.

Editing in Heads or Heads Tails View

While in the early stages of editing a project, you can rearrange clips in the sequence visually by using Heads view or Heads Tails view. These display formats are useful for rearranging simple straight-cut edits.

If you rearrange a split edit (in which the audio extends beyond the video, or the reverse), the system cuts all tracks to the same edit point. To rearrange split edits or edits on multiple video tracks, or to move audio and video separately, use the Segment Mode editing techniques described in "Using Segment Mode" in the Help.

To edit in Heads view or Heads Tails view:

1. Click the Track buttons to select the tracks to be edited.
2. Click the Timeline Fast Menu button, and select View Type > Heads or Heads Tails.

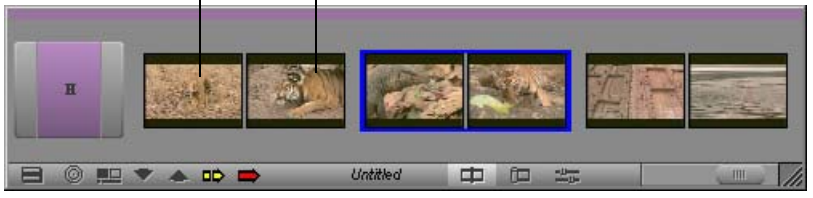
   The Timeline changes to one of the following displays.

Head frame for each clip

Heads view

Head and tail frames for each clip

Heads Tails view



3. Press and hold the Alt key (Windows) or Option key (Macintosh), click the frames representing the clip you want to move, and drag the clip to its new position. The sequence is rearranged to match the changes you made.

Performing a Quick Edit Using the Top and Tail Commands

The Top and Tail commands allow you to perform quick edits to segments in the Timeline.

Use the Top button in the Edit tab of the Command palette to extract footage from the start of the clip or segment to the position indicator. This action is equivalent to the T-R-X keyboard command sequence: Mark Clip, Mark OUT, Extract.

Use the Tail button in the Edit tab of the Command palette to extract footage from the position indicator to the end of the clip or segment. This action is equivalent to the T-E-X keyboard command sequence: Mark Clip, Mark IN, Extract.

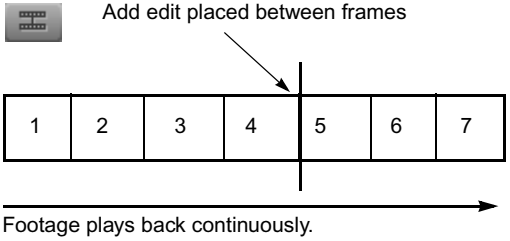
For information about how the Mark Clip button works, see “Marking an Entire Clip or Segment” in the Help.

To edit using the Top and Tail commands:

1. Load a sequence into a monitor.
2. Select the track or tracks you want to edit, and deselect all other tracks.
3. Move the position indicator to the location where you want to perform an edit.
4. Do one of the following:
   - Click the Top button to extract footage from the start of the clip or segment to the position indicator.
   - Click the Tail button to extract footage from the position indicator to the end of the clip or segment.

Adding an Edit (Match Framing)

The Add Edit function places an artificial edit point between frames of a clip. The edit appears in the Timeline as a transition between two clips, but when you play the clip, the footage appears unchanged because the frames are continuous.



This form of edit is also known as a *match frame*. In traditional analog editing, match framing accomplishes specific tasks, such as creating a dissolve between two clips. In Avid editing applications, however, Add Edits (or match frames) function differently. Use match frames primarily to divide and isolate portions of a clip or sequence to modify that portion without affecting the rest of the footage. You can also add edits to filler segments to maintain sync while trimming. Once you make the adjustment, playback of the clip is no longer seamless because the two portions of the clip are different.

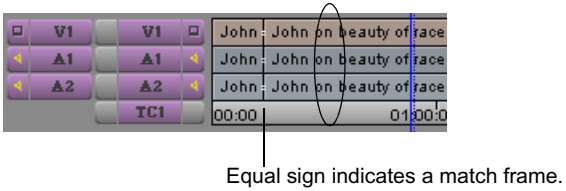
You can add an edit to a single audio or video track, or you can place the Add Edit across several tracks at once.

The Add Edit button appears in the Edit tab of the Command palette. Depending on the model of your Avid editing application and your button mappings, it might appear in other locations such as the Tool palette or the Timeline top toolbar. You can also map the Add Edit button to a custom location. For information about mapping buttons, see "Mapping User-Selectable Buttons" on page 81.

To add a match-frame edit:

1. Move the position indicator to the selected frame.
2. Select the tracks where you want to add the edit.
3. Click the Add Edit button.

   The edit appears in the sequence with an equal sign to indicate a match frame.



By default, the match-frame indicator is white. If a change in level occurs, the match-frame indicator changes to red.

Adding Edits to Filler Clips

You can add an edit to all tracks with filler, regardless of the track selection.

To add an edit to filler clips at the position indicator:

1. Move the position indicator to the selected frame.
2. Alt+click (Windows) or Option+click (Macintosh) the Add Edit button.

   The edit appears on all tracks with filler in the sequence at the position indicator.

Removing Match-Frame Edits

If you make a mistake when adding an edit, or if you have finished performing edit functions with multiple Add Edits and want to remove them, you can remove all Add Edits in the entire sequence or within a selected portion of the sequence.

You can also remove individual match frames by using the Undo command, or by selecting them in Trim mode and pressing the Delete key. For more information on Trim mode, see "Undoing or Redoing Edits" and "Working in Trim Mode: Basics" in the Help.

To remove match-frame edits:

1. Select the entire sequence or a portion of it as follows:
   - Select the entire sequence by removing any IN and OUT points.
   - Select a portion of the sequence by marking an IN point and an OUT point surrounding the match-frame edits (Add Edits) you want to remove.
2. Select the tracks from which you want to remove the edits.
3. Select Clip > Remove Match Frame Edits.

   Your Avid editing application removes the edits.

You cannot remove match-frame edits between segments in which segment effects and audio pan or volume adjustments have been applied.

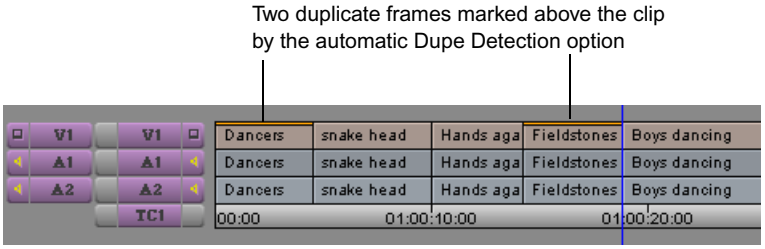
Detecting Duplicate Frames

When you edit offline with plans to generate an EDL, the Dupe Detection feature allows you to visually track duplicate frames of footage while editing so that you can eliminate or manage the requirements of an online dupe reel.

The Dupe Detection feature works only for track V1.

When you activate Dupe Detection, each set of duplicate frames is tagged with a different color. (Up to 10 color sets can be distinguished during a single detection process.) Matching frames have matching colors. You can use any of the Trim Mode options to remove the duplicate frames, if necessary.

The colored bars that distinguish duplicate frames in the sequence are automatically drawn above the frames in the Timeline, as shown.



Orange bars mark the first set of duplicate frames, green bars mark the second set, and so on. You can use Dupe Detection while you are editing to locate duplicate frames, and remove them as the sequence evolves.

To activate Dupe Detection:

- Click the Timeline Fast Menu button, and select Dupe Detection.

Dupe Detection is instantaneous and retroactive; if duplicate frames already exist in your sequence, the colored bars appear immediately. As you edit, your Avid editing application shows duplicate frames as they occur.

You can change the handle size used by Dupe Detection in the Edit tab of the Timeline Settings dialog box. For more information, see "Adjusting Handle Length in Dupe Detection" on page 376.

Your Avid editing application might mark a special effect optical (such as a blowup) as a duplicate frame. Double-check your sequence for this possibility before deleting frames.

Adjusting Handle Length in Dupe Detection

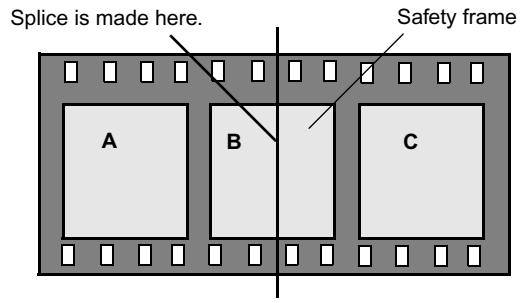
You change handle length information for the display of dupes in the Timeline.

There are two methods:

- In 35mm film editing (using the single-strand method), one extra frame, known as the *safety frame*, provides tabs for the negative cutter to use when cutting two segments of film together. However, this frame is always lost during the negative conform.

35mm conforming: Preparing for a cut

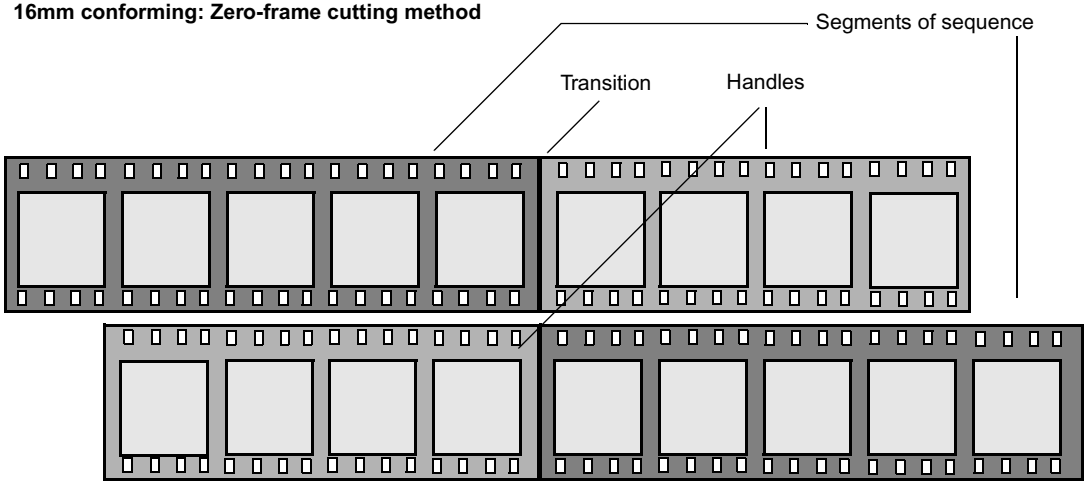
Frames A and C can still be used in a sequence, but frame B is cut in the middle.



- In 16mm film editing (using the multiple-strand method), labs sometimes use the *zero-frame cutting method* to avoid seeing each splice in a 35mm blowup print. In this method, the negative is conformed along with the handles so that the cuts appear as soft frame handles rather than jumps in the resulting 35mm blowup.

Different labs have different standards depending on the equipment used; usually, a minimum of four frame handles is needed.

16mm conforming: Zero-frame cutting method



Adding specific handle lengths to dupes (as they appear both in the sequence and in film lists) has the following advantages:

- **In 35mm single-strand conforming:** Editors can better track duplicate frames and provide the negative cutter with more than one safety frame to avoid losing specific frames.
- **In 16mm multiple-strand conforming:** For labs using the zero-frame cutting method, editors can track the number of handles during editing according to the specific standards of a particular lab.

To adjust handle lengths in Dupe Detection:

1. Double-click Timeline in the Settings list in the Project window.

   The Timeline Settings dialog box opens.

2. Click the Dupe Detection Handles menu in the Edit tab, and select the number of handle frames. The typical 35mm safety frame setting is 0.5 frame (amounting to a 1-frame total with both sides of a cut).
3. Click OK.

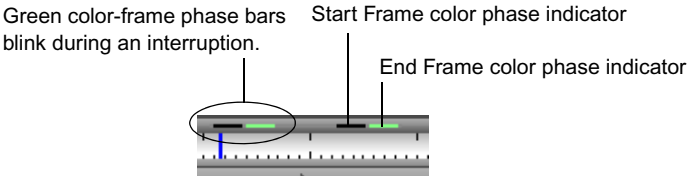
   The selected value is applied to the head and tail of every event.

When you enable Dupe Detection during editing, the handles are added to the colored dupe indicators that appear in the Timeline.

Tracking Color Frame Shifts

If you are preparing for an online edit using 1-inch reel-to-reel sources, you can enable the Color Framing options to track and correct instances where an edit cuts between the four fields (two frames) required to create a complete NTSC color sync signal phase (or eight fields — four frames — required for PAL).

When Color Framing is enabled, green bars appear above the Overwrite and Splice-in buttons (Source and Record monitors) or above the position bar which blink whenever a color sync signal is interrupted by an edit. The blinking lights indicate that color framing is out of phase at the edit transition.


Green color-frame phase bars blink during an interruption.
Start Frame color phase indicator
End Frame color phase indicator

To enable color-frame tracking while editing:

1. Double-click Composer in the Settings list in the Project window.

   The Composer Settings dialog box opens.

2. Click the Color Framing menu in the Edit tab, and select the appropriate option:

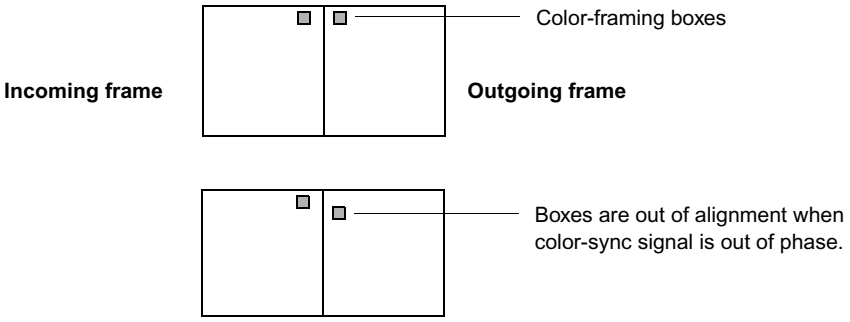
   - For NTSC video, select 4-field.
   - For PAL video, select 8-field.

3. Click OK to complete the setting selection.

To correct color-frame interruption as you edit:

1. Note any edits that cause the green lights to blink. You can adjust the edits now or place locators to return to these edits and correct them later.
2. To adjust the edit, enter Trim mode.

   In Trim mode, your Avid editing application displays small green boxes at the top corners of adjacent frames. When the color sync signals are in phase, the boxes are aligned horizontally.



3. Trim one frame at a time on one side of the transition or the other until the green boxes are aligned and the color-frame phase bars stop blinking.

If you are careful about color framing while editing, you will not need to think about it when assembling your master tape. If you ignore color framing during the edit session, you might have to make adjustments during online editing if your edits interrupted any color-frame fields in the sequence.

Finding Black Holes and Flash Frames

You can use the Find Black Holes and Find Flash Frames commands to help you quickly find parts of your sequence that you might want to delete from the final sequence:

Black holes are segments of the sequence that consist of one or more frames of filler. *Flash frames* are clips that have an extremely short duration, for example, fewer than 10 frames.

To find black holes:

1. Click the Timeline to activate it.
2. Select the tracks you want to search.
3. Move the position indicator to the beginning of the sequence or before the part of the sequence you want to search.
4. Select Clip > Find Black Holes.

   The position indicator moves to the first segment that contains filler. You can then edit or delete the filler, if necessary.

To find the next segment that contains filler:

- Select Clip > Find Black Holes again.

To find flash frames:

1. Set the maximum frame length that you want to detect:
   a. In the Project window, double-click the Timeline Setting.

      The Timeline Settings dialog box opens.

   b. Click the Edit tab.

   c. In the option Find Flash Frames Shorter Than, type the maximum number of frames you want to detect. The default is 10, which indicates the system will detect clips with 9 or fewer frames.

   d. Click OK.
2. Click the Timeline to activate it.
3. Select the tracks you want to search.
4. Move the position indicator to the beginning of the sequence or before the part of the sequence you want to search.
5. Select Clip > Find Flash Frames.

   The position indicator moves to the first flash frame.

To find the next flash frame:

- Select Clip > Find Flash Frames again.

Printing the Timeline

To print the Timeline:

1. Click the Timeline to activate it.
2. Select File > Print Timeline.

   The Print dialog box opens.

The name of the printer and details of the dialog box will vary, depending on your facility.

3. Select the Print options.
4. Click OK (Windows) or Print (Macintosh).

   Your Avid editing application prints the current view of the Timeline. You can also use the Print Timeline command to print the Timeline in Heads view or in Heads Tails view.

Chapter 12

Working in Trim Mode: Advanced

After creating a rough version of a sequence, you can enter Trim mode and fine-tune the transitions between each clip or between whole segments. You can also trim edits as you build a sequence rather than create a rough cut first.

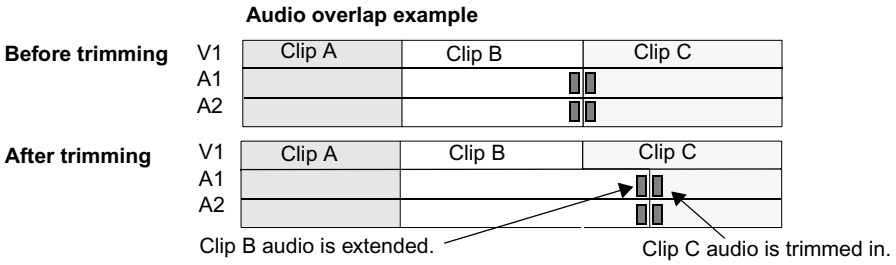
The following topics provide advanced information on trim mode:

- Creating Overlap Edits
- Extending an Edit
- Maintaining Sync While Trimming
- Slipping or Sliding Segments
- Using the Transition Corner Display

For basic information about trimming, see “Working with Trim Mode: Basics” in the Help.

Creating Overlap Edits

You can use an overlap edit (or L-edit) to smooth a transition by giving the viewer the illusion that the audio or video is shared between two separate but adjacent clips.



To create an overlap edit:

1. Perform a straight-cut edit between two clips, including audio and video tracks:
   - If the timing of the video edit is crucial, mark edit points according to video.
   - If the timing of the audio transition is crucial, mark edit points according to audio.
2. Perform a dual-roller trim on either the video track or the audio track, but not on both:
   - If the video transition occurs at the correct place but you want the audio from one clip to linger into the other (or the reverse), trim the audio tracks accordingly.
   - If the audio transition occurs at the correct place but you want the video to transition either before or after the audio cut, trim the video track accordingly.

You can also create an overlap edit for an audio track by using the Audio Mark buttons. See "Marking Audio Clips" on page 253.

Extending an Edit

Use an extend edit to perform dual-sided (A-side and B-side) trims on selected tracks. An extend edit allows you to quickly create a split edit without entering Trim mode. It also allows you to establish the exact frame that you want to trim to by using the position indicator. (When you enter Trim mode, the position indicator moves to the nearest transition by default.)

You can extend edits backward or forward in the Timeline. In either case, like a dual-roller trim, the extend edit function always maintains sync relationships.

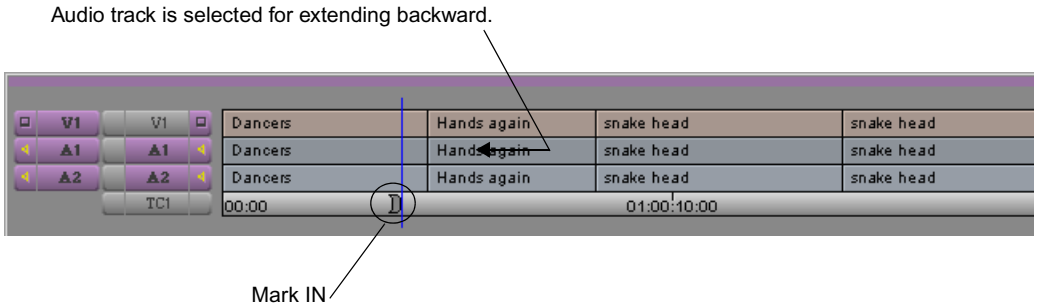
To perform an extend edit:

1. Select the tracks you want to extend.

To extend multiple tracks, all the tracks must have the same edit point in the Timeline. Otherwise, you must extend the tracks separately.

2. Find the point in the sequence to which you want to trim. If the trim point is before the edit, mark an IN point. If the trim point is after the edit, mark an OUT point.

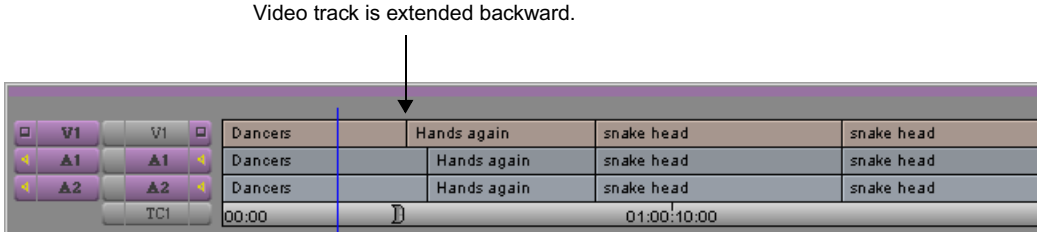
If you are extending the edit to an OUT point, remove any IN points that might be on the track. Otherwise, the extend edit goes in the wrong direction.



3. Click the Extend button.

   The Extend button appears in the Trim tab of the Command palette. You can map the Extend button to a custom location. For information on the Command palette and button mapping, see “Understanding Button Mapping” in the Help.

   The adjustment appears in the Timeline.



Maintaining Sync While Trimming

Because single-roller (A-side or B-side) trims shorten or lengthen the duration of the track being trimmed, any relationships that exist with other tracks downstream of the trim are thrown out of sync. Trim mode has two features to ensure that you do not break sync unintentionally between two or more video and audio tracks when performing single-roller trims:

- You can add black to the track while trimming.
- You can sync lock tracks that maintain a synchronized relationship.

Because dual-roller trims do not cause sync breaks, you can add black only while performing single-roller trims.

Adding Black When Trimming

You can add black filler on either the A-side or the B-side of a transition while maintaining the overall duration of the track and the sync relationships. Your Avid editing application adds a black segment to fill the duration of trimmed frames.

To add black filler while trimming:

1. Click the Trim Mode button to enter Trim mode.
2. Select the transition.
3. Deselect Sync Lock for the tracks to which you want to add black filler.
4. Press and hold the Alt (Windows) or Ctrl (Macintosh) key while dragging the A-side or B-side trim roller.

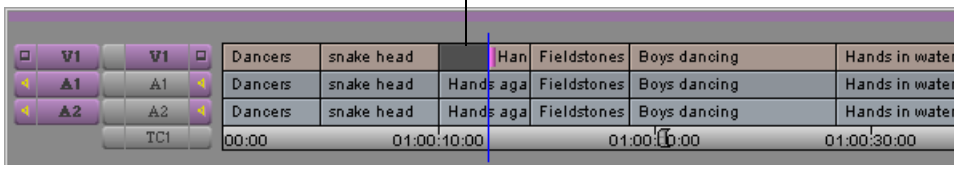
A black segment is added without changing the duration of sequence.

Trimming without adding black

No black is added and sync breaks appear in the Timeline.

Adding black while trimming

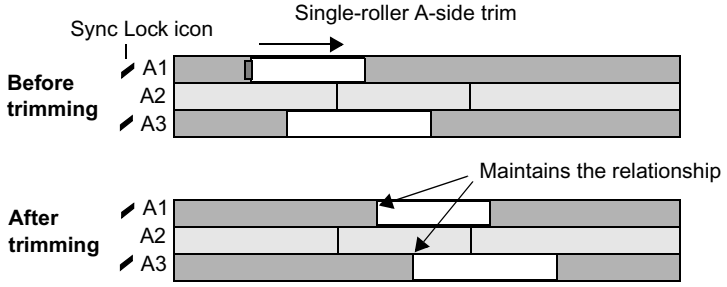
Black fills the trim duration and sync is maintained.



After you have added black filler to a video track, you can replace the filler with footage by performing a replace edit. For more information, see “Performing a Replace Edit” in the Help.

Trimming with Sync-Locked Tracks

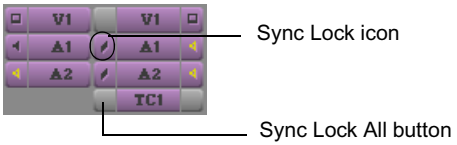
You can sync lock tracks to maintain a synchronized relationship when you perform a single-roller trim.



Sync-locked tracks aid only single-roller trim functions in Trim mode because dual-roller trims do not cause sync breaks.

To trim with sync-locked tracks:

1. Sync lock the tracks as follows:
   - Click the Sync Lock button in the Track Selector panel for the track you want to keep in sync. The Sync Lock icon appears.
   - Click the Sync Lock All button to switch sync lock on and off for all tracks.



2. Perform single-roller trims as necessary, with the following results:
   - When you trim the A-side of a transition forward, all other segments locked in sync move forward with the trim. If the transitions are staggered, this action might split one or more of the segments at the sync point established by the position indicator, leaving filler.

     If you trim the B-side of the transition in the same direction, the additional sync-locked segments slide back in the sequence to maintain sync until they encounter another segment in the same track. At this point, you can trim no further and the system emits a warning sound.
   - When you trim back the A-side of a transition, additional segments locked in sync move back as well. If the segments are staggered and one of the additional sync-locked segments encounters another segment on the same track, you can trim no further and the system emits a warning sound.

     If you trim the B-side of the transition in the same direction, all other segments locked in sync move forward to stay in sync. If the transitions are staggered, this action might split one or more of the sync-locked segments at the sync point established by the position indicator. Filler is added where the split occurs.

Slip and slide trims are not protected for sync. Select all synced tracks for simultaneous slipping or sliding to avoid sync breaks.

Slipping or Sliding Segments

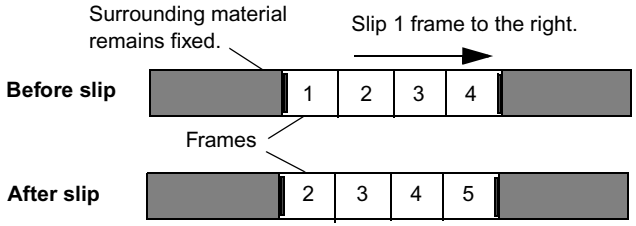
Slip and slide procedures are two unique Trim mode techniques that allow you to make frame-accurate adjustments to a selected segment. They do not affect the overall duration of the sequence or the sync relationships between multiple tracks.

Slip or Slide trimming allows you to do the following:

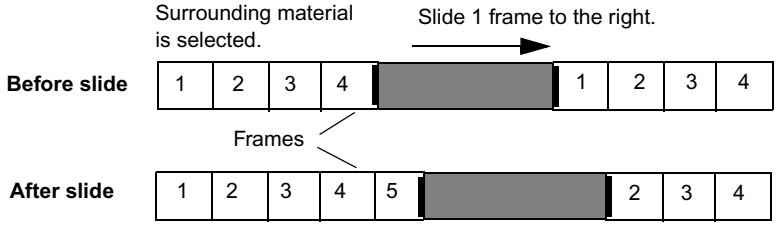
- Slip or slide the video and audio segments together.
- Slip or slide a single segment of video or audio independently from the rest of the segment.
- Slip segments in Source/Record mode by using the Slip Left or Slip Right buttons.

The type of trim you perform (slip or slide) determines which frames are updated, as follows:

- In slip trimming, the two inner monitors for the head and tail frames of the clip change because only the contents of the clip are adjusted. The frames that precede and follow the clip are not affected.



- In slide trimming, the two outer monitors for the outgoing (A-side) and incoming (B-side) frames change because the clip remains fixed while the footage before and after it is trimmed.

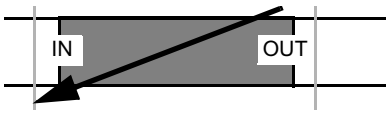


Selecting Segments for Slip or Slide Trimming

To select segments for slip or slide trimming by dragging a lasso:

1. In Source/Record mode, select a segment for slipping or sliding.
2. Enter Trim mode by dragging a lasso from right to left around a segment (two or more transitions).

   You enter slip trim by default.
3. To switch to slide trim, press and hold the Shift+Alt keys (Windows) or Option key (Macintosh) while dragging the lasso from right to left.



To select segments on a lower track:

4. Press and hold the Alt key (Windows) or Option key (Macintosh) while dragging a lasso around the segment.
5. To switch to slide trim, press the Alt key (Windows) or Option key (Macintosh) and double-click the segment.

You can also select two or more contiguous segments within a track for slipping or sliding by dragging the lasso around four or more transitions.

Be sure to draw the lasso from right to left; if you draw from left to right, you enter Segment mode.

To select segments for slip or slide trimming in Trim mode:

1. Double-click a segment to select it for slip trimming.
2. Top select a segment for slide trimming, press Alt key (Windows) or Option key (Macintosh) and double-click the segment.

To switch back to slip trimming:

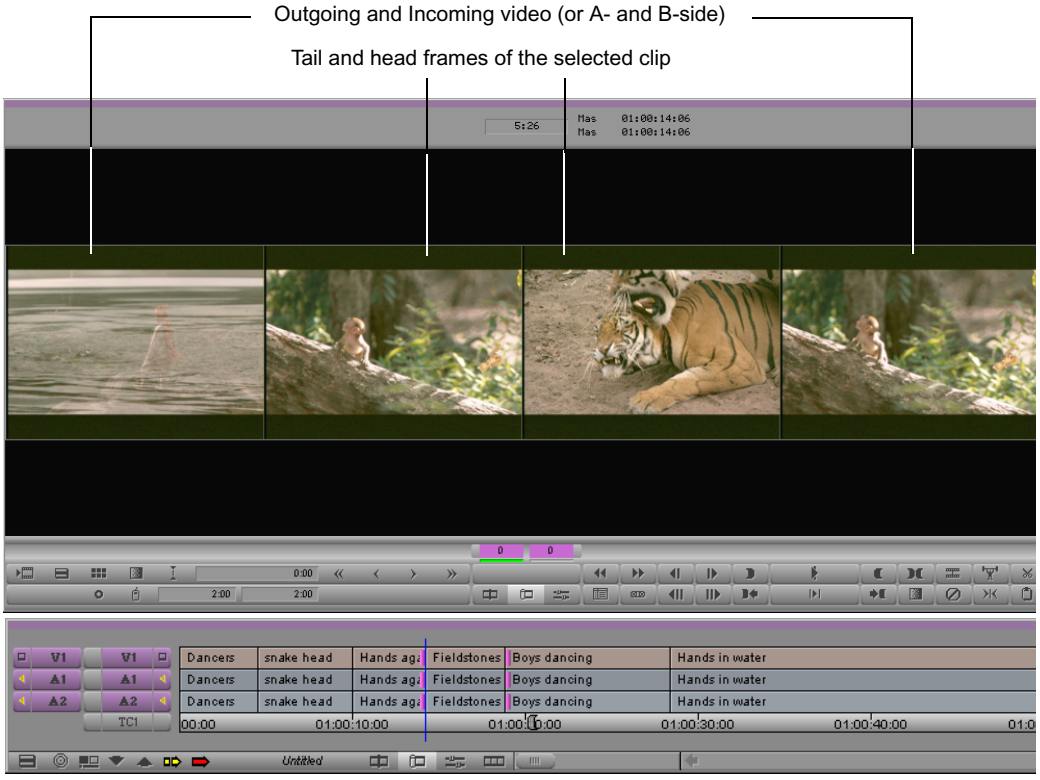
- Press the Ctrl key (Windows) or Command key (Macintosh) and double-click the segment.

To select two or more segments on different tracks for simultaneous slip or slide trimming, do one of the following:

- In Trim mode, press Shift and select the head and tail of a segment for slipping.
- In Trim mode, press Shift and select the outgoing tail frame of the preceding segment and the incoming head frame of the following segment in a sequence for sliding.

The Four-Frame Slip/Slide Display

Once you select the clips for slipping or sliding, the Trim mode interface changes to a four-frame display.



Performing the Slip or Slide Trim

To slip or slide a shot:

1. After selecting the segments, as described in "Selecting Segments for Slip or Slide Trimming" on page 390, do one of the following:
   - Click any roller in the Timeline, drag the selected material to the left or right, and release the mouse button.
   - Use the numeric keypad to enter specific frame-count or timecode values, and press Enter.
   - Use the trim keys or buttons to shift the selection by 1-frame or 10-frame (8-frame for 24p) increments.
   - Use the J-K-L keys.
2. Monitor the progress of the trim by using the monitors, the Trim counters, and the Timeline.

   When you reach the end of available material while slipping a shot, the trim stops. Similarly, when you reach the next transition while sliding a shot along a track, the trim stops. A red bracket at the transition indicates the limit. After completing the initial slide, you can perform another slide in the same direction.
3. When you finish, exit Slip mode or Slide mode by doing one of the following:
   - Click another transition for trimming.
   - Click either the Source/Record Mode or the Effect Mode button to exit Trim mode.
   - Click the Trim Mode button on the Tool palette.
   - Press the Escape key.

Slipping Shots in Source/Record Mode

You can also use the Slip Left and Slip Right buttons to slip a shot in Source/Record mode.

The Slip Left and Slip Right buttons do not appear on the interface or keyboard by default. You must map them from the Trim tab in the Command palette to use this procedure.

To slip a shot in Source/Record mode:

1. Select the tracks for the clips to be slipped.
2. Move the position indicator within the shot that you want to slip.
3. Slip the shot by doing one of the following:

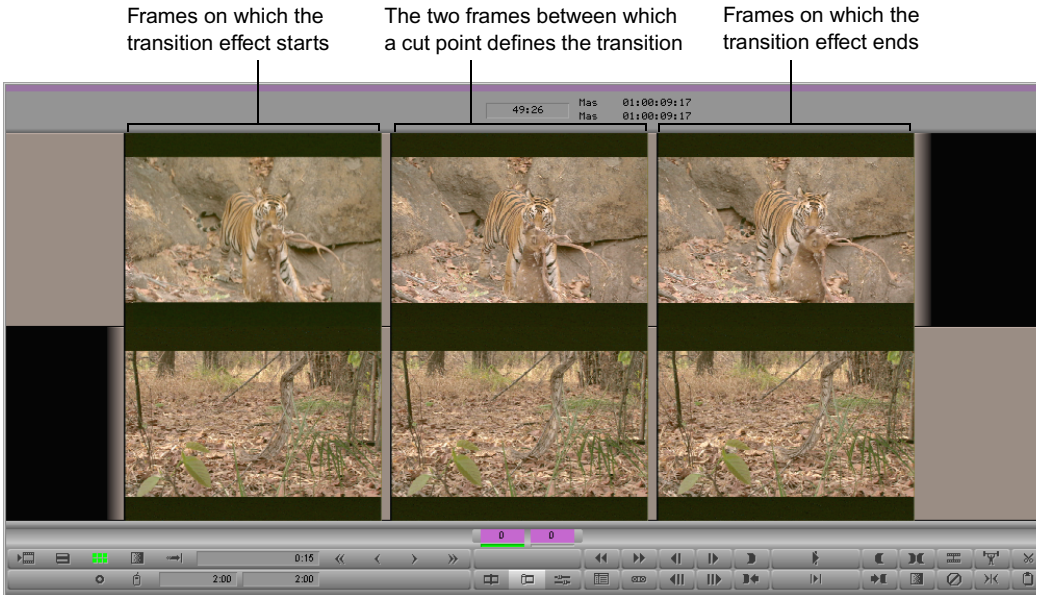
- Click the Slip Left button to slip the shot one frame left (revealing later material from the source clip).

- Click the Slip Right button to slip the shot one frame right (revealing earlier material from the source clip).
- Alt+click (Windows) or Option+click (Macintosh) the Slip Left or Slip Right button to trim 10 frames (8 frames for 24p) at a time.

Using the Transition Corner Display

The Transition Corner Display is a Trim mode interface that shows six frames you can use as reference points when trimming a transition effect.

Transition Corner Display button


Frames on which the transition effect starts
The two frames between which a cut point defines the transition
Frames on which the transition effect ends
49:26
Mas 01:00:09:17
Mas 01:00:09:17

Use the Transition Corner Display to trim the transition effect's start frames, end frames, and duration in timecode or feet+frames (for 24p and 25p projects). As you trim the transition effect, you can see the corresponding frame adjustments in all six monitors simultaneously.

The Transition Corner Display is applicable only to the trimming of transition effects (for example, dissolves, wipes, picture-in-picture, and so on). It is not designed for trimming key, image, or segment effects.

The Transition Corner Display feature is only available when you are in Big Trim mode. To ensure that you enter Big Trim mode when you click the Trim Mode button, select "Never use Small Trim mode" in the Features tab of the Trim Settings dialog box. For more information, see "Trim Settings: Features Tab" on page 725.

To trim a transition using the Transition Corner Display:

1. Select a transition effect for trimming by doing one of the following:
   - Lasso the effect in the Timeline from right to left.
   -
     Click the Trim Mode button to enter Trim mode, and click in the transition in the Timeline.
   - Use the Go to Transition buttons to enter Trim mode, and step through transitions until you highlight the transition you want.
2.
   Click the Transition Corner Display button.

   The button changes to green, and the display is enabled.

To use this button, you must display two rows of buttons in the Composer window or map the button to a palette or a keyboard key. For more information, see "Using the Command Palette" on page 79.

3. Trim the transition effect by clicking the outgoing or incoming frame you want to trim, and then position your pointer on the rollers and drag the transition backward or forward. Press and hold the Alt key (Windows) or Option key (Macintosh) to roll forward or backward slowly one frame at a time.
4. To review your edit, click the Play Loop button.

Chapter 13
Working with Audio: Advanced

You edit audio by using many of the same techniques and tools you use to edit video, including Source/Record mode, Segment mode, and Trim mode functions. Your Avid system also provides several unique features that facilitate audio editing, such as audio scrub, waveform displays, and tools for adjusting and mixing audio levels and pan between speakers. In addition, you can adjust the high, low, and midrange frequency ranges of segments by using the Audio Equalization (EQ) tool.

You can also transfer files to Pro Tools through Avid Interplay, work on them there, and then import them back into the Avid editing application. For more information, see "Using Pro Tools and Interplay" in *Avid Interplay Best Practices*.

The following topics provide advanced information on working with audio:

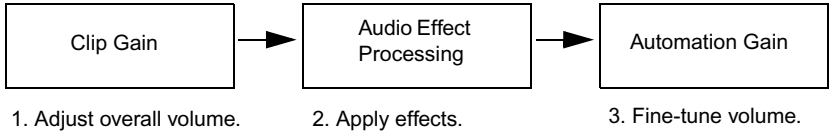
- Audio Gain Staging and an Audio Editing Workflow
- Using External Fader Controllers
- Configuring USB-to-MIDI Software for External Controllers
- Using the Digi 002 and Command|8
- Using the FaderMaster Pro and MCS-3000X
- Using the Yamaha 01V/96 or the Yamaha 01V
- Using the Audio EQ Tool
- Recording Voice-Over Narration Using Audio Punch-in
- Using a GPI Device with the Audio Punch-In Tool
- Displaying Audio Formats in Bins

For basic information about audio, see "Working with Audio: Basics" in the Help or the Basics Guide for your Avid editing application.

Audio Gain Staging and an Audio Editing Workflow

You can adjust the volume or gain of an audio clip at several points during an editing session. For example, you can adjust volume using the Audio Mixer tool in Clip Gain mode and Automation Gain and Pan mode. Also, the EQ tool and many of the AudioSuite plug-in effects allow you to modify the volume of the clip. When you can adjust the volume in a signal chain at several points, the process is referred to as audio gain staging. This section describes the audio gain staging model used by Avid editing applications. It also describes a basic workflow for taking advantage of the gain staging.

You can set audio volume levels with the Audio Mixer tool. When the Audio Mixer tool is in Clip Gain mode, values set by the volume level sliders are referred to as system clip gain values. When the Audio Mixer tool is in Automation Gain and Pan mode, values set by the Audio Mixer tool are ***additive*** to the system clip gain values. This allows you to adjust the values separately. You typically adjust clip gain values first, as shown in the following workflow.



This workflow allows you to apply effects to an audio clip in a way that is similar to the signal flow in a mixing console.

In this workflow, clip gain is like a trim level, where you can lower (attenuate) or increase (amplify) the levels of a clip before applying any other effects. For example, when importing a sound file from an audio CD, you notice when the level of the clip is very high and close to clipping (distortion). If you add an EQ effect to raise the level of the bass, the audio starts to distort. To solve this problem, you can use clip gain to lower the signal level. Then you can adjust the bass in the EQ tool without distorting the audio.

For example, you have copied an audio file from a CD-ROM and you want to equalize the audio, but the overall volume is too loud. To lower volume, do the following:

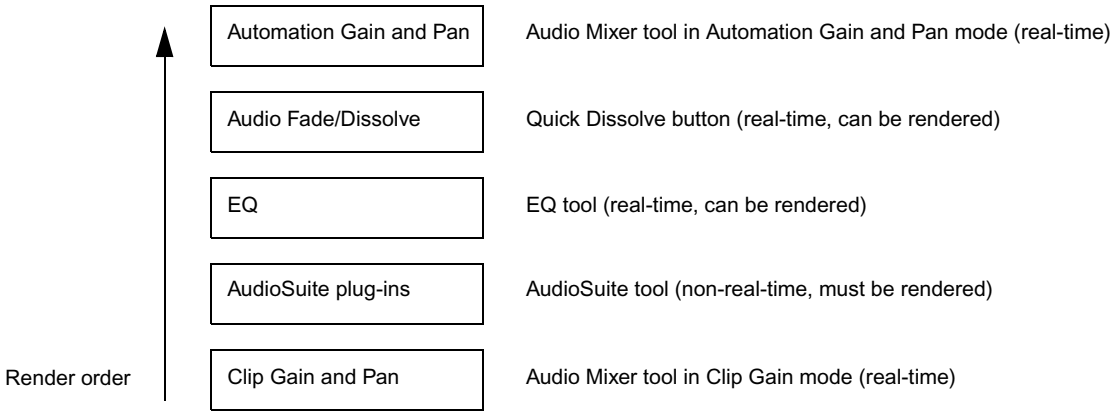
1. Use the Audio Mixer tool in Clip Gain mode to lower the overall volume.
2. Apply an EQ effect and any other audio effects.
3. Use the Audio Mixer tool in Automation Gain and Pan mode to fine-tune the volume of different sections of the audio in the sequence.

This workflow also applies to using AudioSuite plug-ins because some AudioSuite plug-ins affect the level of the audio. Often, if you use clip gain to raise or lower the level before you apply an audio effect, you can achieve higher quality results.

In this workflow, the Audio Mixer tool in Automation Gain and Pan mode acts like the level faders on a console for final mixing of the audio material.

Rendering and Unrendering Order for Audio Effects

The following illustration shows the order that the system uses to process audio effects. You can also think of this as the audio gain staging.


Automation Gain and Pan
Audio Mixer tool in Automation Gain and Pan mode (real-time)
Audio Fade/Dissolve
Quick Dissolve button (real-time, can be rendered)
EQ
EQ tool (real-time, can be rendered)
AudioSuite plug-ins
AudioSuite tool (non-real-time, must be rendered)
Render order
Clip Gain and Pan
Audio Mixer tool in Clip Gain mode (real-time)

The preceding illustration demonstrates how the render order fits into the audio workflow. Changing an audio effect unrenders any audio effect above it in the render order but does not affect audio effects below it in the render order. For example, if you have a clip that contains clip gain, an AudioSuite plug-in effect, and automation gain, and you change the automation gain, the system does not unrender the AudioSuite plug-in effect. This fits into the workflow because automation gain is used for finishing the audio levels. You need to hear how changes in the automation gain affect the rendered effects. You could add, render, and modify EQ and audio dissolves on the same clip and you still would not unrender the AudioSuite plug-in effect.

However, if you change the clip gain on the same clip, the system unrenders the AudioSuite plug-in. This also fits into the workflow because, when you reset the level of the clip, you need to reprocess any effects applied to the clip.

If you have an AudioSuite plug-in and an Audio EQ effect applied to the same effect, only the Audio EQ effect icon is displayed. The AudioSuite plug-in still applies even though the icon is not visible.

Viewing Clip Gain and Automation Gain Values

You can view the clip gain and the automation gain values in the Timeline at the same time.

To turn on the display of clip gain values and automation gain values:

1. Click the Timeline Fast Menu button
2. Select Audio Data.
3. Select Auto Gain, Clip Gain, or both.

You can also view automation pan values by selecting Auto Pan from the Timeline Fast menu. You cannot display Auto Gain and Auto Pan values at the same time in the Timeline.

Bypassing Existing Volume Settings

You can instruct your Avid editing application to ignore the volume settings established with the Audio Mixer tool when playing back or recording a sequence.

To turn off current volume adjustments, do one of the following:

- Click the Bypass button in the Audio Mixer tool.

- Click the Clip Gain button in the Effects Bypass panel in the Effects tab of the Audio Project Settings window. See “Audio Project Settings: Effects Tab” on page 634.

  The volume controls disappear.

To restore the previous settings:

- Click the Bypass button or the Clip Gain button again.

About Adjusting Volume While Playing a Clip Gain Effect

You can use the Audio Loop Play button to change the volume on an existing Clip Gain effect while you play the clip.

The Audio Loop Play button appears in several of the audio effect tools and is also a mappable button in the Play tab of the Command palette. For more information on mapping buttons, see “Mapping User-Selectable Buttons” on page 81.

You can do the following while your Avid editing application plays the loop:

- Adjust audio effects.
- Use the Peak Hold menu in the Audio tool to change between Peak Hold and Infinite Hold.
- Use the Reset Peak button in the Audio tool.

For more information on the Audio tool, see "Understanding the Audio Tool" in the Help. For information on improving response time, see "Improving Response Time When Adjusting Volume" on page 402.

For additional ways to change the volume while playing an Audio Mix effect, see "Recording Automation Gain or Automation Pan Information" in the Help.

Adjusting Volume While Playing a Clip Gain Effect

To adjust volume while playing a Clip Gain effect:

1. Do one of the following:
   - Select an existing Clip Gain effect.
   - Identify an area of the clip with IN and OUT points.
   - Place the position indicator over an audio clip.
2.
   Click the Audio Loop Play button in the Audio Mixer tool.

   Your Avid editing application repeatedly loops through the selected area as follows:
   - If you have IN and OUT points on your sequence, the command loops over the selected area.
   - If there are no IN or OUT points, the command loops over the shortest segment on the selected audio track at the position indicator.
   - If you have only an IN point or only an OUT point, the system uses the location of the position indicator as the second point. For example, if there is an IN point and no OUT point, the system loops from the IN point to the end of the (smallest selected) audio segment under the position indicator.
3. Adjust the volume as necessary.
4. Click the Audio Loop Play button to stop.

   Your Avid editing application automatically saves your changes as part of a Clip Gain effect.

Improving Response Time When Adjusting Volume

If there is no Clip Gain effect on the clip before you start, you do not hear any changes until you click the Audio Loop Play button to stop and replay the effect.

As you adjust the volume values on an existing Clip Gain effect, you might not hear the results immediately. It takes a few seconds for your Avid editing application to apply the changes to the clip. The response time for this feature is considerably longer than it is when changing EQ parameters while using Audio Loop Play. You might need to click the Audio Loop Play button to complete the edit and then play the effect to hear the result.

To improve the response time, do any of the following:

- Monitor as few audio tracks as possible.
- Deselect the video track, if practical.
- Use IN and OUT points to select a narrow interval to adjust.

Using External Fader Controllers

Your Avid editing application supports the following external fader controllers or mixers as control surfaces or for Automation Gain and Automation Pan recording.

- *Digi 002 (Windows only) and Command|8*. These units support touch-sensitive flying faders. While recording automation gain, the faders automatically move. Touch sensitivity means that you can grab a fader and move it during an automation gain recording to quickly punch in a small change in volume. Each track has a separate pan control knob that you can use for automation pan recording.

  You can also use these units as control surfaces for other parts of your Avid editing application. Besides basic functions such as Play, Stop, and Rewind, you can map buttons and menu items to the different buttons on the control surface.

The Digi 002 and Command|8 are the only controllers that can be used as control surfaces to control other parts of the application.

For more information, see “Using the Digi 002 and Command|8” on page 407.

- *JL Cooper MCS-3000X MIDI automation controller.* This unit supports touch-sensitive flying faders. This controller is emulated by the JL Cooper FaderMaster 4/100 and by the Zaxcom Cameo SV.
- *JL Cooper FaderMaster Pro MIDI automation controller.* This low-cost unit allows you to make fine adjustments to audio clips. This unit does not support flying faders, which means that the faders don’t move automatically as you record audio gain information and they must be zeroed manually prior to recording. For information on setting the faders manually, see “Interpreting Position Indicator Lights” in the Help.

  For more information, see “Using the FaderMaster Pro and MCS-3000X” on page 422.
- *Yamaha® 01V/96 and Yamaha 01V digital mixing console*. These units are full-feature digital mixers that also support Audio Gain Automation with flying faders. These faders are not touch-sensitive. Your Avid editing application uses the MIDI controller portion of the Yamaha 01V/96 or the Yamaha 01V mixer for automation gain control.

  For more information, see “Using the Yamaha 01V/96 or the Yamaha 01V” on page 425.

The JL Cooper controllers and Yamaha mixing consoles do not support automation pan recording.

An external fader controller or mixer is optional. It is not required to perform automation gain or automation pan recording.

The following table compares the external fader controllers and mixers.

External Fader Controller and Mixer Features

Feature	Digi 002 and Command|8	FaderMaster Pro	MCS-3000X	Yamaha 01V/96 and Yamaha 01V
Control surface for transport controls and other functions	Yes	No	No	No
Provides audio play, input, and output	Digi 002 only	No	No	No
Record automation gain	Yes	Yes	Yes	Yes
Record automation pan	Yes	No	No	No
Flying faders	Yes	No	Yes	Yes
Touch-sensitive faders	Yes	No	Yes	No

External Fader Controller and Mixer Features (Continued)

Feature	Digi 002 and Command|8	FaderMaster Pro	MCS-3000X	Yamaha 01V/96 and Yamaha 01V
Solo/mute	Yes	Yes	Yes	Yes *Solo works only if you don't use the unit for audio mixing at the same time*
Supports audio mixing	No *The Digi 002 can be used as a standalone audio mixer but not at the same time as it is being used as an automation gain or automation pan controller or control surface.*	No	No	Yes
Latch mode (also known as Snap mode)	Yes	No	Yes	No
Number of steps of accuracy	1024	128	1024	256

The following list provides additional information on touch sensitivity and automatically stopping recording:

- **Touch sensitivity:** As soon as you touch a moving fader on the Digi 002, Command|8, or MCS-3000X, the unit passes control of the fader to you. For more information, see "Using the Latch Mode Feature on the Digi 002 and Command|8" on page 417 or "MCS-3000X Buttons" on page 423.

  On the Yamaha 01V/96 or on the Yamaha 01V, you must press the fader's On button to gain control of a moving fader. For a description of how to control the faders on the Yamaha 01V/96 and the Yamaha 01V, see "Operating the Yamaha 01V/96 and Yamaha 01V" on page 429.

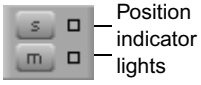
- **Latch mode:** In Latch mode (also known as Snap mode), the fader controller automatically stops recording as soon as you release the fader. When you release the fader, it resumes following the volume information in the Timeline. For more information, see "Using the Latch Mode Feature on the Digi 002 and Command|8" on page 417 and "Using the Snap Mode Feature on the MCS-3000X" on page 424.

For more information on using these external fader controllers or mixers, see "Recording Automation Gain or Automation Pan Information" in the Help.

Adjusting the Volume of Individual Keyframes

To edit the volume for individual keyframes using an external fader controller or mixer:

1. Check the color of the position indicator lights.



   If the external fader controller or mixer is on and is correctly attached to the system, at least one of the position indicator lights on each enabled track is blue.

2. Click an audio gain keyframe.
3. (FaderMaster Pro only) Adjust the sliders on the fader controller until both lights for each enabled track are lit. This indicates that the slider on the fader controller matches the current volume in the Timeline. For more information, see "Position Indicator Lights" in the Help.

On the Digi 002, Command|8, MCS-3000X, Yamaha 01V, and Yamaha 01V/96, the faders automatically adjust to the volume setting.

4. Move the corresponding fader to adjust the volume for the keyframe.

For information on connecting a fader controller or mixer, see "Using an External Fader Controller or Mixer to Record Automation Gain" on page 406.

Adjusting the Pan of Individual Keyframes

To edit the pan values for individual keyframes using a Digi 002 or Command|8:

1. Click an audio gain keyframe.
2. Activate the track on the Digi 002 or Command|8.
3. Move the corresponding pan knob to adjust the pan for the keyframe.

   Your Avid editing application displays the values in the Pan Value display for the corresponding track in the Audio Mixer tool.

The position indicator lights do not apply to automation pan.

For information on connecting a fader controller or mixer, see "Using an External Fader Controller or Mixer to Record Automation Gain" on page 406.

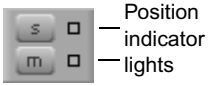
Using an External Fader Controller or Mixer to Record Automation Gain

To record audio gain information using an external fader controller or mixer:

1. Attach the fader controller or mixer to your system.

   For more information, see "Connecting Serial and MIDI Port Devices" in the Help.

   The position indicator lights change to blue when the fader controller or mixer is on and correctly attached to the system.



2. Move the blue position indicator to the section of audio that you want to adjust and mark IN to OUT points.
3. (FaderMaster Pro only) Note the colors of the position indicator lights for the track you want to adjust. Move the fader until both lights are blue. If you cannot adjust it to the exact position where both lights are blue, get it as close as you can.
4. Set Preroll and Postroll values, if necessary.
5. Click the Record button to start recording your actions.

6. Depending on the fader controller or mixer, listen to the audio and do the following:
   - **FaderMaster Pro:** When you want to start recording volume information, move the corresponding fader. The system does not begin recording until you move a fader.
   - **Digi 002, MCS-3000X, and Command|8:** When you want to start recording volume information, either touch or move the corresponding fader. The MCS-3000X faders are touch sensitive.
   - **Yamaha 01V and Yamaha 01V/96:** When you want to start recording volume information, click the fader's On button and move the fader.

If the Yamaha 01V fader or the Yamaha 01V/96 fader is not moving, you can move it without first clicking the On button.For more information, see "Operating the Yamaha 01V/96 and Yamaha 01V" on page 429.

When you record over previously recorded audio volume keyframes, the MCS-3000X, the Yamaha 01V, and the Yamaha 01V/96 automatically display the changing values. This allows you to make quick adjustments to existing automation gain recordings.

7. Click the Record button again to stop recording.
8. Click the Audio Loop Play button to play the clip and test your results.
9. To decrease the number of keyframes, click the Audio Mixer Tool Fast Menu button, and select Filter Automation Gain on Track — In/Out. (Click the Track Selection button for a track to enable Filter Automation.)

If you delete too many keyframes, use the Undo command to restore them.

10. Repeat step 9 until you have decreased the number of keyframes to an acceptable level.

    You should remove as many excess keyframes as possible while still maintaining the volume changes.

Using the Digi 002 and Command|8

You can use the Command|8 as a control surface for your Avid editing application as well as a controller for automation gain and automation pan recording.

On Windows systems only, you can use the Digi 002 as an audio input and output device for your Avid editing application. You can also make use of its control surface capabilities and use it as a controller for live mix mode and for automation gain and automation pan recording.

Although the Digi 002 works with Digidesign Pro Tools on the Macintosh operating system, you cannot use it with an Avid video editing application on a Macintosh system.

The following table compares some of the features of the Digi 002 and Command|8.

Digi 002 and Command|8 Comparison

Feature	Digi 002	Command|8
Connection type	FireWire	USB
Use as an audio device for Avid editing application (play, record, output)	Yes	No
Works with Avid editors on Mac OS® X for controlling automation gain and as a control surface	No	Yes
Control surface for Avid editing application	Yes, when used as an audio I/O device	Yes
Control surface for automation gain and automation pan recording	Yes, when used as an audio I/O device	Yes

The following topics provide more information on using the Digi 002 or Command|8:

Using the Digi 002 with Avid DNA Hardware (Windows Only)

Windows systems with Avid DNA hardware (Avid Adrenaline, Avid Mojo, or Avid Mojo SDI) can use the Digi 002 as an external audio device. This means you can use the Digi 002 to play, record, and output audio.

You can also use the Digi 002 as a standalone mixer. However, you cannot use the Digi 002 as a mixer while you are using it as the audio input and output device for your Avid editing application.

When the Digi 002 is attached to the Avid editing system, all of its audio input and output connections are live. However, the Avid DNA and Digi 002 remain as two separate audio sub-systems. They are not combined to increase the number of available audio channels. Audio I/O works as follows:

- The system creates a list of input options based on the audio devices that are present. For example, Digi 002 analog, Digi 002 S/PDIF, and Avid DNA analog.
- For output, all 8 channels are played to the Digi 002 and the Adrenaline hardware simultaneously.

You might need to make additional cable connections between the Digi 002 and your Avid DNA hardware in order to maintain sync between audio and video. When the sync cable is connected correctly between the Digi 002 and your Avid DNA hardware, your Avid editing application displays a green 002 in the Timeline top toolbar. The following table describes this connection for each Avid DNA device:

Avid DNA Device	Audio/Video Sync Connection
Avid Adrenaline	Connect one end of an RCA cable to the RCA S/PDIF connector on the Avid Adrenaline, and connect the other end to the S/PDIF input on the Digi 002. This allows the Digi 002 to maintain S/PDIF clock signals and receive video sync from the Adrenaline and the optional blackburst generator. (Option) Connect a black burst generator to the Ref connector on the Avid Adrenaline. *Avid recommends using a black burst generator when performing an audio-only capture.*
Avid Mojo	Connect one end of an RCA cable to the analog audio output connectors labeled Clk on the Avid Mojo (white audio output) and connect the other end to the S/PDIF input on the Digi 002. This allows the Digi 002 to receive video sync from the Avid Mojo and the optional blackburst generator. (Option) Connect a blackburst generator to the Ref connector on the Avid Mojo. *Avid recommends using a blackburst generator when you are performing an audio-only capture.*
Avid Mojo SDI	Connect one end of a BNC-to-RCA cable to the Word-clock and S/PDIF Out BNC connector (black cable) on the video output cable from the Avid Mojo SDI. Connect the other end of the BNC-to-RCA cable to the S/PDIF input on the Digi 002. This allows the Digi 002 to receive video sync from the Avid Mojo SDI and the optional blackburst generator. (Option) Connect a blackburst generator to the Ref connector (black cable) on the video input cable to the Avid Mojo SDI. *Avid recommends using a blackburst generator when you are performing an audio-only capture.*

For more information on connecting the Digi 002 hardware to your Avid DNA hardware and on audio and video synchronization, see “Using the Avid Adrenaline,” “Using the Avid Mojo,” or “Using the Avid Mojo SDI” in the Help.

You cannot hear the results of audio scrubbing when the Digi 002 is attached to the Avid Adrenaline system.

Using the Command|8 with Your Avid Editing System

The Command|8 is primarily a control surface. It can be used for controlling aspects of the user interface as well as for automation gain and automation pan recording. The Command|8 can be used by all the Avid editing applications that use Avid DNA hardware.

The following describes some of the analog audio features of the Command|8 that can be used by Avid editing applications:

- The Command|8 has two stereo inputs, one stereo output, and a headphone jack.
- You can use the stereo inputs as follows:
  - Avid Adrenaline users can connect channel 1 and 2 from the Adrenaline hardware to the first stereo pair input and connect channels 3 and 4 to the second pair. Then you can switch between the two inputs.
  - Avid Mojo or Mojo SDI users can connect the audio outputs to one stereo input pair

Configuring the Digi 002 or Command|8

Before you configure your Digi 002 or Command|8 with your Avid editing application, install and configure the device as described in the documentation that comes with the Digi 002 or Command|8.

The Digi 002 or Command|8 must be turned on before you start your Avid editing application. If you start the application when the controller is turned off, you must exit the application, turn the controller on, and then start the Avid editing application.

To set the correct ports in the Controller Settings dialog box.

1. Connect the Digi 002 or Command|8 to your Avid editing system and turn on the unit.
2. Start your Avid editing application.
3. Click the Settings tab in the Project window.
4. Double-click Controller Settings.

   The Controller Settings dialog box opens. The Controller menu, Port menu, and Edit Settings button apply to the control surface. For Windows systems, you can use either a Digi 002 or a Command|8.For Macintosh systems, you can use a Command|8. The Gain Controller Port applies to any controller that you connect for automation gain or automation pan recording.

5. From the Controller menu, select one of the following:
   - Digidesign 002 (Windows only)
   - Digidesign Command|8
6. From the Port menu, select one of the following:
   - Windows - “Digi 002 Control Port” or “C|8 Surface”
   - Macintosh - Digidesign Inc, Command|8 Port 1
7. From the Gain Controller Port menu, select a controller for automation gain or automation pan recording.

   The Gain Controller Port menu displays all COM or MIDI ports that are available on the system.
8. (Option) Click Edit Settings to view or modify the button assignments.

Mapping Buttons and Menu Commands

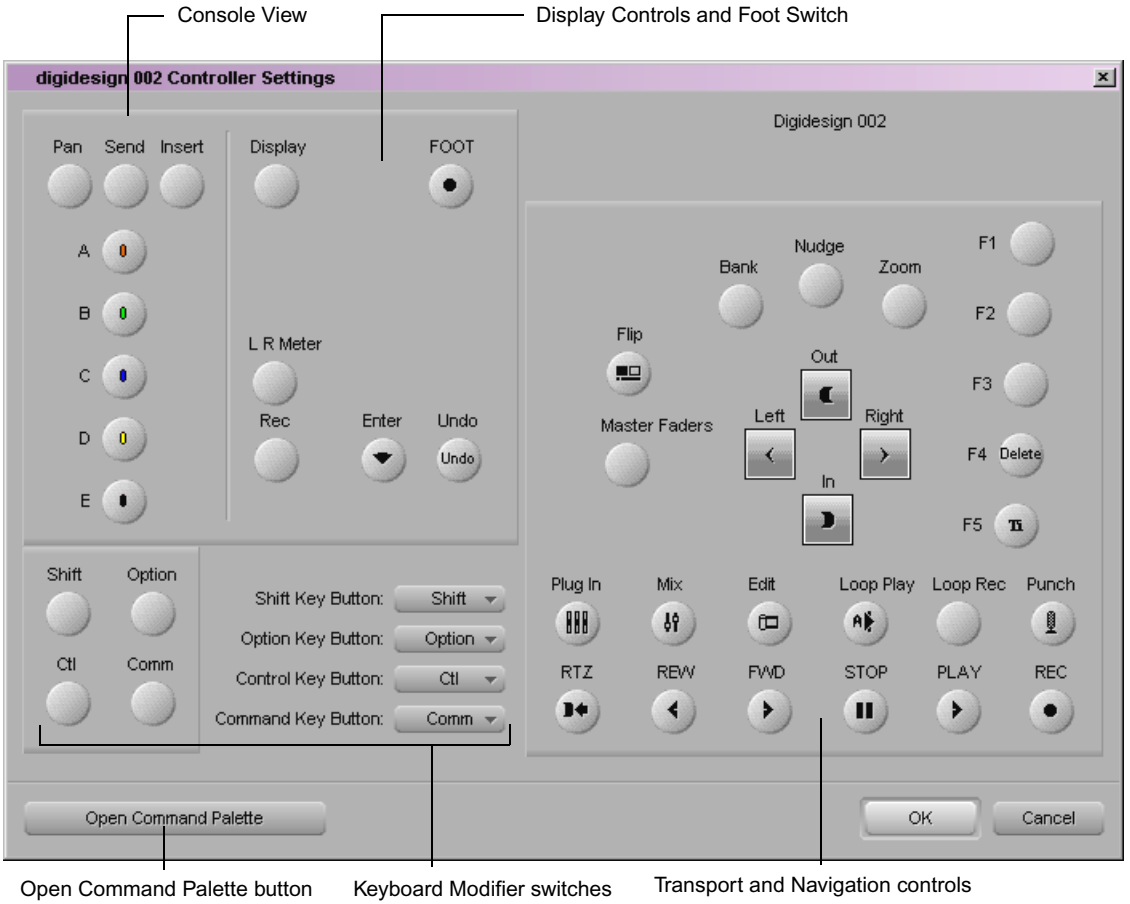
You can map the buttons in the Digidesign 002 Controller Settings dialog box to buttons on the Command palette and to menu commands.

To display the dialog box for mapping buttons and menu commands:

- Click the Edit Settings button in the Controller Settings dialog box.

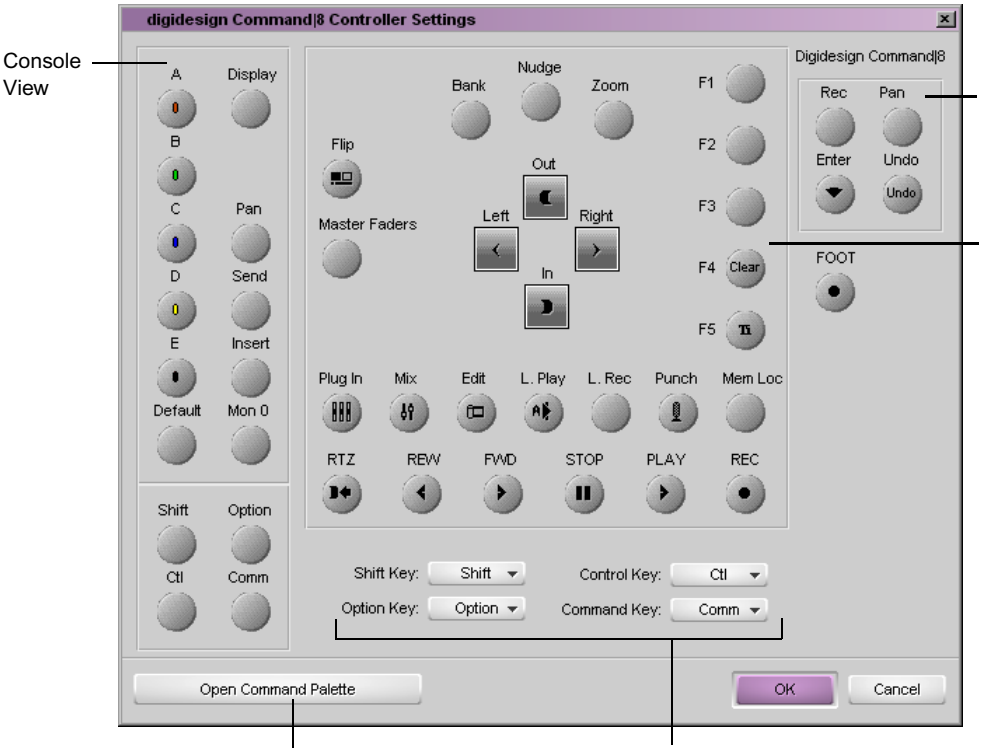
  The Digidesign 002 Controller Settings or Digidesign Command|8 Controller Settings dialog box opens.

The following illustration shows both the Digidesign 002 Controller Settings dialog box and the layout on the Digi 002 itself. Compare the two layouts to see which buttons are mappable using the Digidesign 002 Controller Settings dialog box.


Console View
Display Controls and Foot Switch
digidesign 002 Controller Settings
Pan
Send
Insert
Display
FOOT
A
B
C
D
E
L R Meter
Rec
Enter
Undo
Undo
Digidesign 002
Bank
Nudge
Zoom
F1
F2
F3
F4
Delete
F5
Flip
Out
Master Faders
Left
Right
In
Shift
Option
Ctl
Comm
Shift Key Button:
Option Key Button:
Control Key Button:
Command Key Button:
Plug In
Mix
Edit
Loop Play
Loop Rec
Punch
RTZ
REW
FWD
STOP
PLAY
REC
Open Command Palette
OK
Cancel
Open Command Palette button
Keyboard Modifier switches
Transport and Navigation controls

Mic/Line/Inst Input controls
Console/channel view section (contains a pan knob for each track)
Keyboard Modifier switches
Monitor Section
Status indicators and Display controls
Transport and Navigational controls
Fader Section

The following illustration shows the Digidesign Command|8 Controller Settings dialog box as well as the layout on the Command|8 itself. Compare the two illustrations to see which buttons are mappable using the Digidesign Command|8 Controller Settings dialog box.



Mic/Line/Inst Input controls
Console/channel view section
Keyboard Modifier switches
Monitor Section
Status indicators and Display controls
Transport and Navigational controls
The Console/channel view section contains a pan knob for each track
Fader Section

Button Layouts on the Digi 002 and Command|8

The buttons on the Digi 002 and Command|8 can have different functions if you press the Shift, Control, Option, or Command keys. You can either use the keyboard or press one of the Keyboard Modifier switches on the controller surface.

Button on Controller	Macintosh key	Windows key
Shift	Shift	Shift
Control	Control	Control
Option	Option	Alt
Command	Command	NA

To view the different button settings on the Controller Settings dialog box:

- Press the Shift, Control, Option, or Command key while viewing the Digidesign Command|8 Controller Settings dialog box.

You can change the Keyboard Modifier switches by selecting a new button from the appropriate menu in the Keyboard Modifiers area.

Each Controller Settings dialog box has an Open Command Palette button. Use the standard techniques for mapping buttons and menu selections from the Avid interface to the buttons on the control surface. For more information, see “Mapping User-Selectable Buttons” on page 81 and “Mapping Menu Commands” on page 83.

To map a menu command to a button on a Controller Settings dialog box:

1. Click the Settings tab on the Project window.
2. Double-click Controller Settings.

   The Controller Settings dialog box opens.
3. Choose either Digidesign 002 or Digidesign Command|8 from the Controller menu.
4. Click Edit Settings.

   The Digidesign 002 Controller Settings dialog box or Digidesign Command|8 Controller Settings dialog box opens.
5. Click Open Command Palette.

   The Command palette opens.
6. Click Menu to Button Reassignment on the Command palette.

   As you move the mouse over a button, the cursor changes to a menu icon.

7. Click the button on the dialog box that you want to change.

   The system highlights the button.

8. Select a menu command. For example, select Tools > Audio Punch-In.

   The system maps the menu command to the button.

9. When you finish mapping menu commands, click Active Palette on the Command palette or Button to Button Reassignment to map buttons.

10. When you finish mapping menu commands and buttons and you want to save your changes, click OK.

    The Digidesign 002 Controller Settings dialog box or the Digidesign Command|8 Controller Settings dialog box closes and the Controller Settings dialog box appears.

11. Click OK.

    The system makes the new button assignments.

The assignments do not take effect until you click OK in both dialog boxes.

Using Buttons to Change Focus in the Avid Editing Application Interface

Many buttons perform different functions depending on which window in the Avid interface is active (has focus). For example, if the Timeline is active, pressing Play plays the sequence in the Timeline. If a bin is in Frame view and a clip is selected, pressing Play plays the footage in the clip.

To ensure that you perform the correct operation when you press a button on the control surface, you can map some buttons to menu commands that give focus to a particular window or tool. For example, on the Digi 002, the F5 key is mapped to Tools > Timeline by default. Pressing the F5 button on the Digi 002 puts focus on the Timeline.

To see the function of a mapped button, hold the cursor over the button to view the tooltip.

You cannot assign a function to the F1 key on a Command|8. The F1 key is a local function on the device.

Do not press the Standalone button on the Digi 002 while you are using it as a control surface for your Avid editing application. This puts the controller in Standalone mode and closes the FireWire connection. To use the controller again, you must exit the application, power cycle the controller, and then relaunch your Avid editing application.

Using a Foot Pedal as a Foot Switch

The Digi 002 and Command|8 each have a connection on the back for a foot pedal. The system accepts any “normally open” foot pedal. For example, you can use a standard normally-open sustain pedal for an electronic keyboard.

You can assign any button or menu item to the foot pedal. By default, the system assigns the foot pedal to the Record button on the Audio Punch-In tool. You could also assign the foot pedal to the Shift key function.

Switching Between the Digi 002 and Command|8

The button mappings for the Digi 002 carry over to the Command|8. The button-mapping dialog boxes for the Digi 002 and Command|8 are set up differently to match the layout of the controllers, but the same settings are used for both controllers.

There are several buttons on the Command|8 that are not on the Digi 002:

- Mon 0
- Default
- MemLock

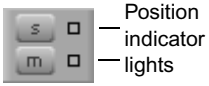
These buttons appear in the Digidesign Command|8 Controller Settings dialog box and do not appear in the Digidesign 002 Controller Settings dialog box.

Using a Digi 002 or Command|8 to Record Automation Pan

To record automation pan information using a Command|8:

1. Attach the Digi 002 or Command|8 to your system. See “Configuring the Digi 002 or Command|8” on page 410.

   The position indicator lights change to blue when the fader controller or mixer is on and correctly attached to the system.



2. Click the Timeline Fast Menu button and select Audio Data > Auto Pan.
3. Move the blue position indicator to the section of audio that you want to adjust and mark IN to OUT points.
4. Set Preroll and Postroll values, if necessary.
5. Click the Record button to start recording your actions.

6. Listen to the audio and turn the pan knob for the track.

   The system displays the values in the Pan Value display for the corresponding track in the Audio Mixer tool.

7. Click the Record button again to stop recording.

8. Click the Audio Loop Play button to play the clip and test your results.
9. To decrease the number of keyframes, click the Audio Mixer Tool Fast Menu button, and select Filter Automation Pan on Track — In/Out. (Click the Track Selection button for a track to enable Filter Automation.)

If you delete too many keyframes, use the Undo command to restore them.

10. Repeat step 9 until you have decreased the number of keyframes to an acceptable level.

    You should remove as many excess keyframes as possible while still maintaining the pan changes.

Using the Latch Mode Feature on the Digi 002 and Command|8

The Digi 002 and Command|8 have a Latch Mode button for each track that allows you to easily punch-in and punch-out small sections of automation gain information. The Channel View buttons on the Digi 002 are used as the Latch Mode buttons. These buttons are directly above the display on the Digi 002. On the Command|8, the Latch Mode buttons are directly below the display. The first two buttons are labeled EQ and Dynamics.

When a fader is not in Latch Mode, it automatically stops recording as soon as you release the fader. When you release the fader, it begins moving again as it follows the volume information in the Timeline.

The light inside the Latch mode button is on when a fader is not in Latch mode.

To use Latch Mode:

1. Click the Latch Mode button for the appropriate tracks on the controller. You can click the button before or during a recording session.
2. Set IN and OUT points, and click the Record button. The system begins playing the section and the faders move accordingly.
3. When you want to make an adjustment, grab the fader and move it to change the volume. The system immediately begins recording.
4. When you are finished adjusting the section, release the fader. The system stops recording (but keeps playing) and the fader snaps back to the level that is in the Timeline.

When the track is in Latch mode, the system continues to record audio volume information after you release the fader. Press the Latch Mode button to stop recording and snap the button back to its current Timeline position.

Configuring USB-to-MIDI Software for External Controllers

Once you have connected a fader controller to your Avid editing system, you can install USB-to-MIDI software and configure the software to recognize your fader controller.

For information on connecting a fader controller, see "Connecting Serial and MIDI Port Devices" in the Help.

The term fader controller applies to the following third-party controllers:

- JL Cooper FaderMaster Pro MIDI automation controller
- JL Cooper MCS-3000X MIDI automation controller
- Yamaha 01V/96 or Yamaha 01V digital mixing console

Avid supports the MIDIMAN™ MIDISPORT™ 2x2 USB-to-MIDI converter.

To reduce traffic on the USB, connect the USB-to-MIDI converter only if you need to use the JL Cooper FaderMaster Pro, JL Cooper MCS-3000X, Yamaha 01V/96, or Yamaha 01V fader box.

Installing USB-to-MIDI Software (Windows)

To install the MIDISPORT 2x2 driver software:

1. Make sure the MIDISPORT 2x2 USB-to-MIDI converter is *not* connected to the system. When you are ready to load the drivers, you will use a USB connector to connect the MIDISPORT 2x2 USB-to-MIDI converter to your Avid system.
2. Download the latest MIDISPORT 2x2 drivers from the following Web site:

   www.m-audio.com.

   The system downloads a compressed, executable file.
3. Double-click the downloaded file to uncompress the driver files to a storage device or to a folder on your Avid system.
4. Double-click the Install.txt file included with the downloaded files. This file contains the instructions for loading the drivers.

5. To initiate the driver installation, use a USB connector to connect the MIDISPORT 2x2 USB-to-MIDI converter to the system. You do not need to connect the external fader to the MIDISPORT 2x2 device.

   The system automatically detects that a new device has been connected and opens the Found New Hardware Wizard dialog box.

6. Follow the instructions in the Install.txt file.

If you uncompressed the files to a folder on your system, two drivers might appear in the list. Choose either one.

Installing USB-to-MIDI Software (Macintosh)

The Mac OS X operating system contains automatic support for USB-to MIDI devices.

To install the MIDISport 2x2 driver software:

1. Download the latest MIDISPORT 2x2 drivers from the following Web site:

   www.m-audio.com.

   The system downloads a compressed, executable file.

2. Double-click the downloaded file to uncompress the driver files to a floppy disk or to a folder on your Avid system.
3. Double-click the installer file.
4. Follow the on-screen instructions to load the software.

Testing the Fader Connections

To test the external fader controller connections:

1. Connect all MIDI hardware devices.

   For more information, see “Connecting Serial and MIDI Port Devices” in the Help.

MIDI port A is the default port used by the Avid system. To change the port configuration, see “Switching Between MIDI Connections on the USB-to-MIDI Converter” on page 421.

2. Move the sliders on the fader controller, and confirm that the MIDI IN LED indicator on the USB-to-MIDI converter turns on and off appropriately.

   The USB LED indicator pulses — this is expected behavior.

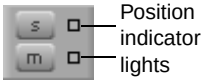
3. Start your Avid editing application, and open the Project window.
4. Click the Settings tab and double-click Controller Settings.

   The Controller Settings dialog box opens.

5. Choose the appropriate port for the device from the Gain Controller menu.
6. Click OK.
7. Select Tools > Audio Mixer.
8. Do one of the following:
   - Click and hold the Audio Mixer Mode button and select Automation Mode from the menu.
   - Click the Audio Mixer Mode button and cycle through the Audio Mix mode settings to the Automation Mode setting.
9. Click the Audio Mixer Tool Fast Menu button, and select Calibrate Hardware Sliders.

   If the external fader controller is connected and the system is using the correct MIDI port, then the Audio Mixer tool displays the following:

   - At least one of the position indicator lights is on (blue).



   - The Recording Status Light changes to gold.
10. If the lights do not change to blue, see “Troubleshooting the MIDI Connections” on page 421.
11. To disable the hardware calibration, click the Audio Mixer Tool Fast Menu button, and select Calibrate Hardware Sliders.

    The Recording Status Light changes to black.
12. Move the sliders on the external fader controller.

    The corresponding sliders move in the Audio Mixer tool.

Now you are ready to use the fader controller with your Avid editing application. For more information on using the Audio Mixer tool, see “Understanding Automation Gain and Pan” in the Help.

Switching Between MIDI Connections on the USB-to-MIDI Converter

If you need to switch to a different MIDI port connection, change the hardware connections and then make the appropriate change in the Controller Settings dialog box.

To change the MIDI port connection in your Avid editing application:

1. Click the Settings tab in the Project window.
2. Double-click Controller Settings.

   The Controller Settings dialog box opens.
3. Select the correct MIDI port from the Gain Controller menu.
4. Click OK.
5. Select Tools > Audio Mixer.
6. Do one of the following:
   - Click and hold the Audio Mixer Mode button and select Automation Mode from the menu.
   - Click the Audio Mixer Mode button and cycle through the Audio Mix mode settings to the Automation Mode setting.

   If the fader or mixer is on and correctly configured, the indicator lights on the Audio Mixer tool should change to blue. If the lights do not change to blue, see "Troubleshooting the MIDI Connections" on page 421.

Troubleshooting the MIDI Connections

Do the following if the Audio Mixer tool does not respond to the external fader controller:

1. Make sure the MIDI hardware devices are connected.

   For more information, see "Connecting Serial and MIDI Port Devices" in the Help.
2. Make sure the MIDISport driver software is installed. See "Installing USB-to-MIDI Software (Windows)" on page 418 and "Installing USB-to-MIDI Software (Macintosh)" on page 419.
3. Check that the MIDI cable connections are correct. Check that the cables are connected from Out to In and from In to Out.
4. Check the Controller Settings dialog box in the Settings list of the Project window. Verify that the correct Gain Controller port is selected.

5. (Macintosh only) Use the Apple System Profiler to check whether the system is recognizing the MIDI device:
   a. Select Apple menu > About This Mac.
   b. Click More Information.

      The Apple System Profiler opens.
   c. Click the Devices and Volumes tab.

      The USB Information portion of the display identifies the USB devices that the system recognizes. The system might not display the name of each device, but the number of USB devices should match the number of devices you have connected to the system.

Using the FaderMaster Pro and MCS-3000X

The setup procedure is similar for both units. To connect and initialize the fader controllers, see “Connecting Serial and MIDI Port Devices” in the Help.

For the MCS-3000X to recognize the Avid application software, you must set the rear DIP switch #4 down (ON).

To set the correct port in the Controller Settings:

1. Start your Avid editing application.
2. Click the Settings tab in the Project window.
3. Double-click Controller Settings.
4. In the Gain Controller Port menu, select the port that corresponds to the FaderMaster Pro or MCS-3000X.
5. Click OK.

To test the external fader controller:

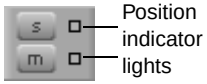
1. Select Tools > Audio Mixer.

   The Audio Mixer tool opens.
2. Do one of the following:
   - Click and hold the Audio Mixer Mode button and select Automation Mode from the menu.
   - Click the Audio Mixer Mode button and cycle through the Audio Mix mode settings to the Automation Mode setting.

3. Click the Audio Mixer Tool Fast Menu button, and select Calibrate Hardware Sliders.

   The box changes to blue.

4. Check the color of the position indicator lights. If the external fader controller is connected, at least one of the lights should be on (blue). If the external fader controller is not connected properly, the lights will probably appear gray.



5. Move the faders on the external fader controller.

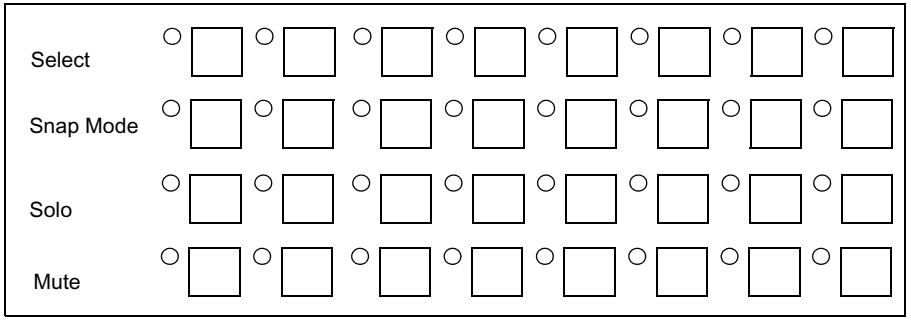
   The corresponding fader should move in the Audio Mixer tool.

An external fader controller is optional. It is not required to perform Automation gain recording.

MCS-3000X Buttons

There are four rows of unlabeled buttons at the top of the MCS-3000X fader controller.

The following illustration labels each row of buttons:



- *Select buttons:* The green light next to the Select button for a track is on when you are recording Audio Gain Automation on the track. The green light is off when you are listening to the volume level in the Timeline.

  If the track is in Snap mode, as soon as you touch the fader, the Select button light turns on to indicate that you are recording. When you release the fader, the Select button light turns off and the fader begins moving with the Timeline volume.

When the track is not in Snap mode, as soon as you touch the fader, the Select button light turns on to indicate that you are recording. However, when you release the fader, the Select button light stays on, indicating that you are still recording. To stop recording, press the Select button.

- *Snap Mode buttons:* For information on these buttons, see "Using the Snap Mode Feature on the MCS-3000X" on page 424.
- *Solo buttons:* These buttons solo the selected tracks.
- *Mute buttons:* These buttons mute the selected tracks.

Using the Snap Mode Feature on the MCS-3000X

The MCS-3000X has a Snap Mode button (Snap mode is also known as Latch mode) for each track that allows you to easily punch-in and punch-out small sections of automation gain information. The second row from the top contains the Snap Mode buttons. For more information on button locations, see "MCS-3000X Buttons" on page 423.

In Snap mode, the fader automatically stops recording as soon as you release the fader. In addition, the fader continues to display the volume information in the Timeline.

To use Snap mode:

1. Click the Snap Mode button for the appropriate tracks on the external fader controller. You can click the button before or during a recording session.
2. Set IN and OUT points, and click the Record button. The system begins playing the section and the faders move accordingly.
3. When you want to make an adjustment, grab the fader and move it to change the volume. The system immediately begins recording.
4. When you are finished adjusting the section, release the fader. The system stops recording (but keeps playing) and the fader snaps back to the level that is in the Timeline.

When the track is not in Snap mode, the system continues to record audio volume information after you release the fader. Press the Select button (top row) to stop recording and snap the button back to its current Timeline position.

The green light next to the Select button for a track is on when you are recording automation gain on the track. The green light is off when you are listening to the volume level in the Timeline.

Ganging Faders on the FaderMaster Pro

You can use the features available on the FaderMaster Pro to gang faders. When the faders for two tracks are ganged, the fader sends identical volume messages for both tracks when you move one fader. This can be useful when you have stereo tracks.

The ganged faders do not move together physically. For information on ganging the faders, see the FaderMaster Pro user's manual.

If you have two stereo tracks and want to gang faders 1 and 2 to respond to movement on fader 1:

1. On the FaderMaster Pro, press the PROG button to light the Fader LED.
2. Press the Group button, and move fader 2 until 1 is displayed.
3. Press the PROG button to turn off the Fader LED.

Now, when you move fader 1, your Avid editing application will receive identical volume information for fader 2.

To turn off the group feature, repeat steps 1 to 3, but assign fader 2 to 0.

You cannot gang faders on the Digi 002, the MCS-3000X fader controller, the Yamaha 01V/96 mixer, or the Yamaha 01V mixer.

Using the Yamaha 01V/96 or the Yamaha 01V

Your Avid editing application supports the Yamaha 01V/96 or Yamaha 01V digital mixing console. The Yamaha 01V/96 and the Yamaha 01V are fully functional digital audio mixers that also support automation gain recording.

Setting Up the Yamaha 01V/96 or Yamaha 01V

This section describes how to set up the Yamaha 01V/96 or Yamaha 01V digital mixer.

For instructions on connecting the Yamaha 01V/96 or Yamaha 01V to your Avid system, see "Connecting the Yamaha 01V/96 Mixer" in the Help.

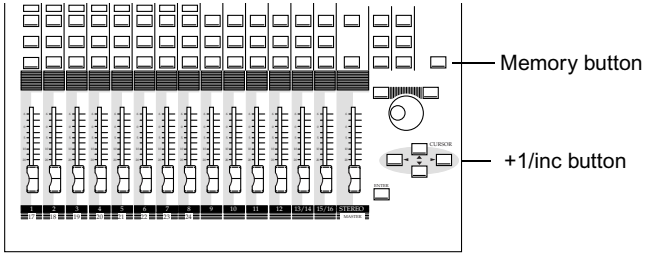
Initializing the Yamaha 01V/96 or Yamaha 01V

This section describes how to initialize the Yamaha 01V/96 or Yamaha 01V digital mixer. These procedures should have to be done only once and repeated only if the mixer's operational parameters have been manually changed to settings that are incompatible with your Avid editing application.

You should perform these procedures when you first set up the unit. You might also find it necessary to perform the steps if the unit stops working correctly with your Avid editing application. Because you can carry out a wide variety of mixing tasks with the Yamaha 01V/96 and the Yamaha 01V, it is possible that some changes you make to the unit might cause it to stop working with your Avid editing application. If this happens, use the following procedures to reinitialize the mixer to the factory defaults.

To return to factory defaults for the Yamaha 01V:

1. Turn on the mixer while pressing and holding the red Memory button.



   The LCD panel displays a message asking if you want to reset the system.

2. Answer yes by pressing the +1/inc button.

To return to factory defaults for the Yamaha 01V/96:

1. Turn on the mixer while pressing and holding the STORE button.
2. The LCD panel displays a message asking if you want to Initialize or Password reset.
3. Select Initialize, and press Enter.

Configuring the Yamaha 01V/96 or Yamaha 01V to Recognize Control Messages

After you initialize the mixer, you must configure it to receive and transmit control messages. The Yamaha 01V/96 and Yamaha 01V can both receive MIDI messages. The Yamaha 01V can also be controlled via a serial port and must be configured to receive serial control messages if you are using a serial connection. The Yamaha 01V/96 can receive USB control messages.

Configure the mixer whether you are using a USB connection or a MIDI connection.

To configure the Yamaha 01V/96 or Yamaha 01V to recognize MIDI control messages:

1. Press the MIDI button.

   The system displays the first pane of the MIDI Options window.
2. Set the following controls in the MIDI Options window:
   - Set Control Change TX to ON.
   - Set Control Change RX to ON.
3. Set Port to MIDI.

To reconfigure the Yamaha 01V to recognize serial control messages:

1. Press the MIDI button.

   The system displays the first pane of the MIDI Options window.
2. Set the following controls in the MIDI Options window:
   - Set Control Change TX to ON.
   - Set Control Change RX to ON.
3. Set Port to PC-2.

To configure the Yamaha 01V/96 to recognize USB control messages:

1. Press the DIO/Setup button repeatedly until the MIDI/TO HOST SETUP pane appears.

   The system displays the first pane of the MIDI Options window.
2. Set the following controls in the USB Options window:
   a. Set RX Port to USB 1.
   b. Set TX Port to USB 1.
3. (Windows only) Do the following to load the driver:
   a. Insert the Studio Manager CD-ROM before plugging in the board.
   b. Plug the board into a USB port and allow the Plug & Play to install the MIDI driver.
   c. Start your Avid editing application, and in the Controller Settings dialog box, select the YAMAHA USB IN 0-1 port.
4. (Macintosh only):
   a. For the most up-to-date driver, download and install the Generic USB Driver for Mac OS X from www.Yamaha.com.
   b. Start the Avid editor, and in the Controller Settings tool, select Port 1 from the Gain Controller Port menu.

Starting the Avid System with the Yamaha 01V/96 or the Yamaha 01V Attached

To set the correct port in the Controller Settings:

1. Start your Avid editing application.
2. From the Project window, click the Settings tab.
3. Double-click Controller Settings.
4. From the Gain Controller Port menu, select one of the following:

   For Windows:

   - In-A-USB MidiSport 2x2 for MIDI
   - YAMAHA USB IN 0-1 for USB (01V/96 only)
   - COM *portnumber* for Serial (01V only)

   For Macintosh:

   - M-Audio MidiSport Port A for MIDI
   - YAMAHA USB Device Port 1 for USB
   - Other values depend on the serial interface you are using. For example, for a Keyspan USB/Serial adapter, the value is USA28xb2p1.1

When you start your Avid system with the Yamaha 01V/96 or the Yamaha 01V attached, you can use the faders for mixing audio channels or for performing automation gain recording. Use the following buttons to switch between audio mixing and gain recording:

Buttons	Yamaha 01V	Yamaha 01V/96
Channel buttons for audio mixing	Home	1 - 16 channel 17 - 32 channel
Gain editing buttons for automation gain recording	Option I/O	Master

The Yamaha 01V supports a digital I/O option that uses channels 17 through 24. If you intend to use the digital I/O option, you should move the digital I/O option to channels 1 through 8 by using the Swap mode. You can access Swap mode from pane 5 of the OPTION I/O screen. For more information, see the Yamaha documentation.

Operating the Yamaha 01V/96 and Yamaha 01V

The following procedures explain how to access the Yamaha 01V/96 or 01V for audio mixing and how to perform automation gain recording.

To access the faders for audio mixing (channels 1–16):

- Press the Home (Yamaha 01V) or 1-16 or 17-32 (Yamaha 01V/96) button.

  When the button is lit, you can use the faders for audio mixing.

For information on audio mixing, see the Yamaha 01V/96 or the Yamaha 01V documentation.

To record automation gain information:

1. Select Tools > Audio Mixer.
2. Do one of the following:
   - Click and hold the Audio Mixer Mode button and select Automation Mode from the menu.
   - Click the Audio Mixer Mode button and cycle through the Audio Mix mode settings to the Automation Mode setting.

1. Press the Option I/O (Yamaha 01V) or Master (Yamaha 01V/96) button.

   The faders move into the correct position for recording automation gain.

2. When recording automation gain, use the On button on each channel to switch between Timeline control of audio gain to user control of audio gain.

   You can punch-in and punch-out of gain recording as many times as you want.

The Automation Gain window must be in 8-channel mode and you need to have 8 tracks of audio to use all 8 faders of the Yamaha 01V/96.

The Yamaha 01V/96 and the Yamaha 01V faders are not touch sensitive in the same way as the JL Cooper MCS-3000X MIDI fader controller. As soon as you touch a moving fader on the MCS-3000X, the unit passes control of the fader to you. On the Yamaha 01V/96 or the Yamaha 01V, you must press the fader's On button to gain control of a moving fader.

If a fader is not moving, you can move the fader to take control without pressing the On button.

If you attempt to catch a moving fader, the mixer will try to control the fader. Press the On button to take control of the fader.

Soloing Avid System Channels

If you are not using the Yamaha 01V/96 or the Yamaha 01V to mix the audio outputs from the Avid system, you can use the Solo button on the Yamaha 01V/96 or the Yamaha 01V to solo audio channels during automation gain recording.

To enable Solo mode:

1. Press the MIDI button.

   The mixer displays pane 1 of the MIDI Options window in the LCD display.

2. Set the following controls in the MIDI Options window:
   - Set Param Change TX to ON.
   - Set Param Change RX to ON.

If Solo mode is on when you are mixing audio, it interferes with the normal operation of the mixing board functions. If the audio outputs from your Avid system are connected to the Yamaha 01V, leave the Param Change TX and Param Change RX controls set to OFF.

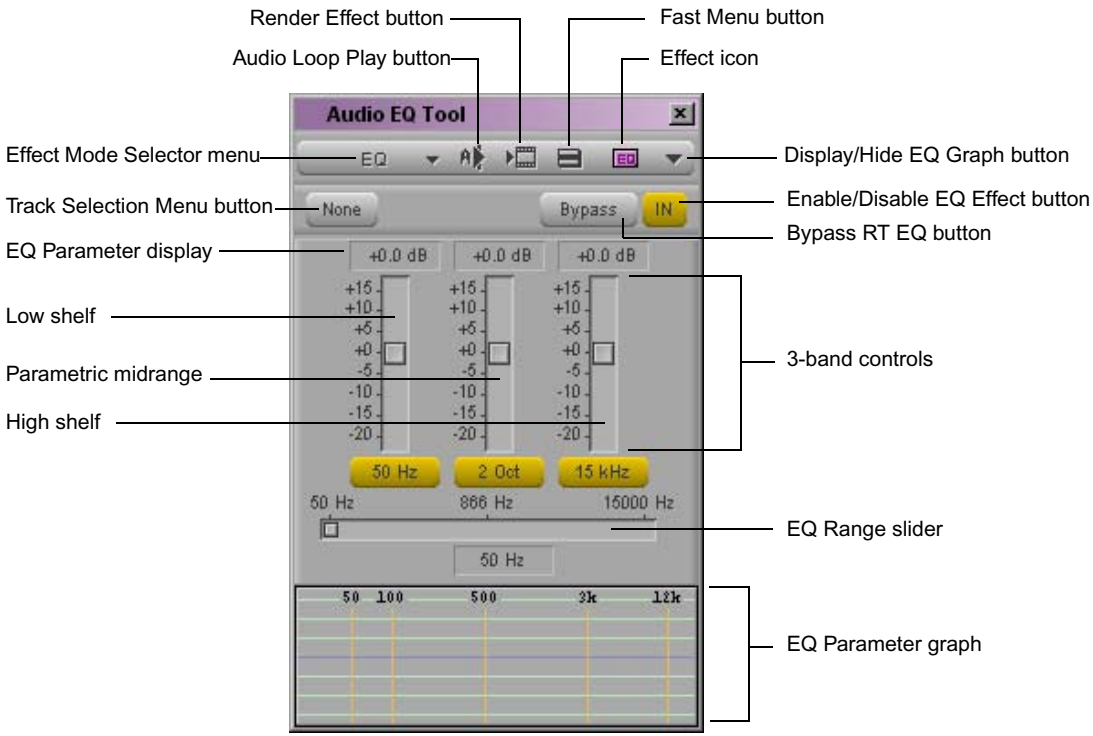
Using the Audio EQ Tool

The Audio Equalization (EQ) tool supports real-time, segment-based frequency equalization on individual clips. This feature allows you to adjust the high, low, and midrange frequency ranges of an audio clip. You can also save a variety of audio EQ effects and apply them in different circumstances, as described in this section.

To access the Audio EQ tool, do one of the following:

- Select Tools > Audio EQ.
- If one of the Audio tools is already open, click the Effect Mode Selector menu, and select EQ.

  The Audio EQ tool opens.



Audio EQ Tool Features

This section describes the basic buttons and menus on the Audio EQ tool as well as the EQ-specific items on the tool.

Basic EQ Tool Features

The following table describes the buttons that appear along the top portion of the Audio EQ tool:

Button	Description
Effect Mode Selector	Allows you to select among the Audio EQ, Audio Mixer, and AudioSuite Plug-In tools.
Audio Loop Play	Allows you to make adjustments to an EQ effect while you play the effect. This button is also a mappable button on the Command palette. For more information about using this button, see "About Adjusting Volume While Playing a Clip Gain Effect" on page 400.
Render Effect	Allows you to render an effect without leaving the Audio EQ tool.
Effect icon	Allows you to create an EQ template. Drag the icon to an open bin to create the template.
Fast Menu	Allows you to perform the following tasks: • Set EQ for enabled tracks. • Remove EQ for one or more tracks. • Apply an effect template. See "Using Audio EQ Templates" on page 441.
Track Selection Menu	Allows you to choose which tracks are enabled for the EQ effect. When you select an item from this menu, the system selects or deselects the corresponding track in the Timeline.
	If you enable more than one track in the Timeline, the tracks are designated by plus signs (+). They indicate that the effect will be applied to more than one track.
Display/Hide EG Graph	Allows you to display or hide the Parametric Curve display.
Bypass RT EQ	Allows you to instruct the system to ignore all the EQ effects. This button is also available in the Automation Gain tool and the Output tab in the Audio Project Settings dialog box. If you select this feature in one place, it is selected in the others as well.
Enable/Disable EQ Effect	Allows you to enable or disable the current EQ effect. When the button is yellow, the effect is enabled. (The button text IN stands for inline.)

EQ-Specific Features

The Audio EQ tool provides three bands of control:

- The first band, the low shelf, has four *turnover points* (50 Hz, 80 Hz, 120 Hz, and 240 Hz). A turnover point is the point at which the curve starts to return to 0.

  A *shelf* affects all frequency values within the range of the shelf. The low shelf affects all frequencies from 20 Hz to the low shelf turnover point. For more information, see "Low Shelf Example" on page 439.

- The second band is the parametric midrange. This band has two *bandwidth* values, 1/4 octave and 2 octaves. These values control the width of the curve. For more information, see "Small Octave Range Example" on page 440.

- The third band, the high shelf, has four turnover points (6 kHz, 8 kHz, 12 kHz, and 15 kHz). The high shelf affects all frequencies from the high shelf turnover point to 20 kHz.

The horizontal center line of the graph is 0 (zero). As you move the curve below the zero line, the corresponding frequencies are deemphasized. Above the zero line, the corresponding frequencies are emphasized. The parametric midrange allows a smooth transition from deemphasized frequencies to emphasized frequencies.

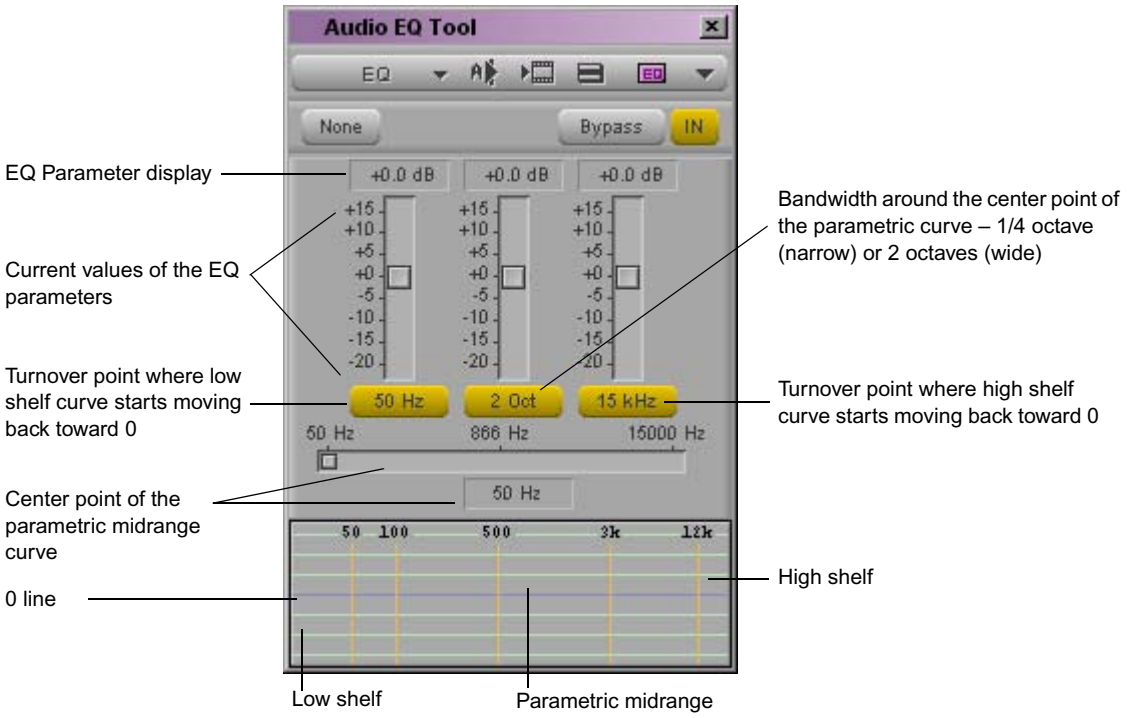
The IN button allows you to turn off an individual EQ effect (the currently selected effect). The button is yellow when the EQ effect is on (inline) and gray when the EQ effect is off.

The Ignore EQ option turns off all EQ effects for the sequence. Rendered EQ effects still play correctly.

When you apply Audio EQ effects, consider the following:

- Apply Audio EQ to entire segments only. You cannot isolate portions of a segment for an Audio EQ effect by using IN to OUT points. You must use add edits (match frames) to mark off a smaller segment.
- Use IN to OUT points to select a range of complete segments for applying an Audio EQ effect. Segments that fall within the marks, either in part or whole, have the effect applied to them.

The following illustration shows the Audio EQ tool with the frequency response curve displayed and identifies the related areas of the tool.



The Audio EQ tool allows you to emphasize or de-emphasize audio frequencies. The height of the curve in the bottom pane shows the amount of emphasis or de-emphasis (also called boost or cut) that is being applied. The range is from +15 dB to –20 dB.

Applying Audio EQ Effects

To adjust audio EQ for a track:

1. Load the sequence containing the audio track.
2. (Option) Isolate a portion of an audio segment by placing add edits.
3. (Option) Mark a range of audio segments by adding IN to OUT points in the track.
4. Select Tools > Audio EQ.

5. Click and hold the Track Selection Menu button in the Audio EQ tool, and select a track to be adjusted.

The Track Selector panel in the Timeline is updated to reflect your selection.

If multiple tracks are enabled in the Timeline, then plus signs (+) appear next to the enabled tracks in the Audio EQ tool.

6. Click the Audio Loop Play button to play the currently selected audio clip within the current IN to OUT range. To stop playing the loop, click the button again or click anywhere in the Timeline.
7. Use one of the following methods to change a value in the Audio EQ tool:
   - Click a number along the vertical edge of the Low Shelf, Parametric Midrange, or High Shelf sliders.
   - Click the Low Shelf, Parametric Midrange, or High Shelf slider, and type a value.

     Values are cumulative until you press Enter (Windows) or Return (Macintosh). For example, if you want to enter the value 12, simply type it. However, if you enter 1 and then want to change the value to 2, press Enter (Windows) or Return (Macintosh) before typing the 2.
   - Click a slider, and then drag the slider to a new position.
   - Click the EQ Parameter display, and type a value on the numeric keypad.
   - Set a value of 0 dB by clicking the slider and entering 0, or by clicking 0 along the vertical edge of the Low Shelf, Parametric Midrange, or High Shelf sliders.
8. Click the Audio EQ Tool Fast Menu button, and select Set EQ to apply the adjustments to the track. The command works as follows on the selected tracks:
   - **IN and OUT points:** Apply the EQ effect to selected tracks between the points.
   - **An IN point (no OUT point):** Apply the EQ effect to full clips from the IN point to the end of selected tracks.
   - **No points:** Apply the EQ effect globally (across entire tracks).

   The Audio EQ Tool Fast menu also allows you to remove EQ effects from one track or all enabled tracks and provides access to a number of predefined EQ templates. For a description of predefined audio templates, see "Using Audio EQ Templates" on page 441.

For example, the following illustration shows a segment with one EQ effect applied to Audio Clip 2 in track A1. If you select Set EQ In/Out, the current EQ effect is also applied to Audio Clip 1 and Audio Clip 3 on track A1.

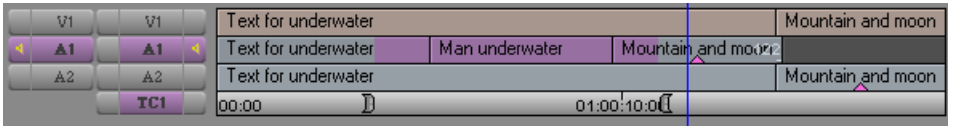
Before Set EQ In/Out

After Set EQ In/Out – EQ effect is added to Audio Clip 1 and Audio Clip 3.

If there is no EQ setting on the currently selected clip, selecting Set EQ In/Out deletes the EQ settings on all clips within the IN to OUT range. For example, because there is no EQ setting on Audio Clip 3 in the following example, Set EQ In/Out deletes the EQ effect from Audio Clip 1 and Audio Clip 2.

Before Set EQ In/Out

After Set EQ In/Out – EQ effect is deleted from Audio Clip 1 and Audio Clip 2.

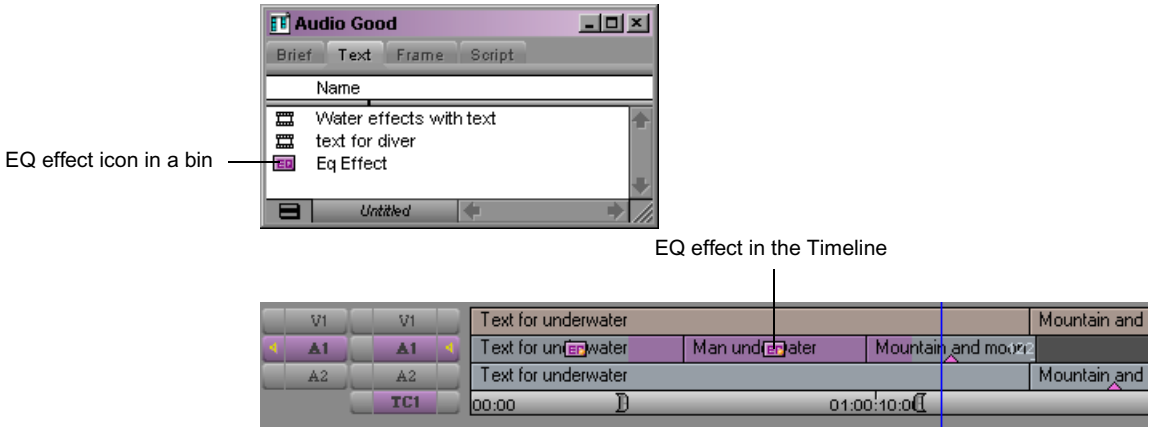


Set EQ In/Out applies only to the audio track currently selected by the Audio EQ tool. You can change your selected region by eliminating or adding marks in the Timeline, or by selecting a different track.

9. Play through the audio again, using the Audio Loop Play button.
10. Repeat steps 6 to 9 until you are satisfied with the EQ adjustments.

Saving Audio EQ Effects

Your Avid editing application treats an EQ setting as an effect. You can save EQ settings in a bin just as you save any other effect template. This makes it easy to save EQ settings and apply them whenever you need them. The following illustration shows an EQ Effect icon in a bin and in the Timeline.



To save EQ settings in a bin:

- Drag the effect icon in the Audio EQ tool to a bin.

To copy the settings to another audio clip:

- Drag the effect icon in the Audio EQ tool to another audio clip in the Timeline.

For more information on using effect templates, see “Working with Effect Templates” in the Help.

Removing Audio EQ Effects

To remove an Audio EQ effect:

1. Move the position indicator to the effect in an active track.
2. Do one of the following:

- In Source/Record mode, click the Remove Effect button.
- In Trim or Effect mode, press the Delete key.

You can also use the commands from the Audio EQ Tool Fast menu.

Audio EQ Examples

The following examples show two different ways to use the Audio EQ tool to remove excess bass from an audio track. In these examples, assume that a bass drum in the sound track is very pronounced and the Audio EQ tool is used to deemphasize it. Also assume that there are voices on the same track as the music. The human voice covers a wide range of frequencies, and the challenge is to preserve the bass frequencies of the voices while deemphasizing the bass drum sound.

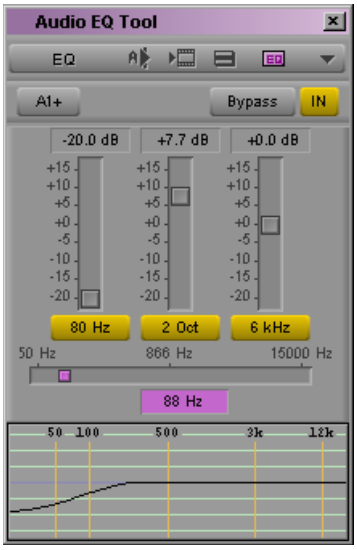
Consider that the goal of the adjustments is the final sound. You should use small adjustments to preserve as much of the original sound track as possible. Do not be overly concerned about specific parameter values.

Low Shelf Example

This example adjusts the low shelf to deemphasize the bass. By dropping the low shelf to –20 dB, we are able to deemphasize it. However, there are voices on this track, and simply dropping the low shelf also removes some bass from the voices.

To compensate for the loss of bass:

1. Use the 2-octave midrange setting to create a wide midrange.
2. Move the midpoint of the parametric curve to 88 Hz (Windows) or 90 Hz (Macintosh).
3. Boost the midrange of the parametric curve to +7.7 dB.

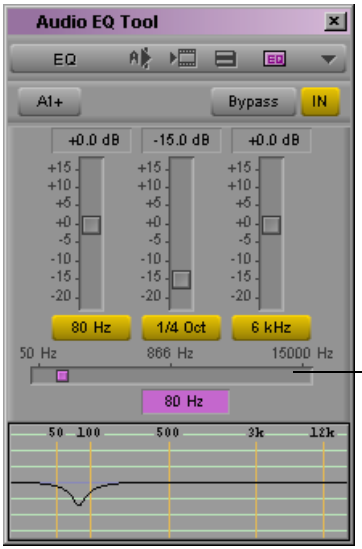


Small Octave Range Example

This example isolates the particular frequency that we want to deemphasize. In this example, we do not use the low shelf, but instead use the parametric midrange to isolate the frequency.

To isolate the frequency:

1. Use the ¼-octave influence range.
2. Set the midrange EQ parameter to –15 dB.
3. Use the EQ Range slider to move the midpoint of the parametric curve until it isolates the bass frequency. In this case, the bass frequency that we want to deemphasize is approximately 80 Hz.



Use the EQ Range slider to move the center point of the parametric curve and locate a specific frequency.

To locate a specific frequency and either emphasize or deemphasize it:

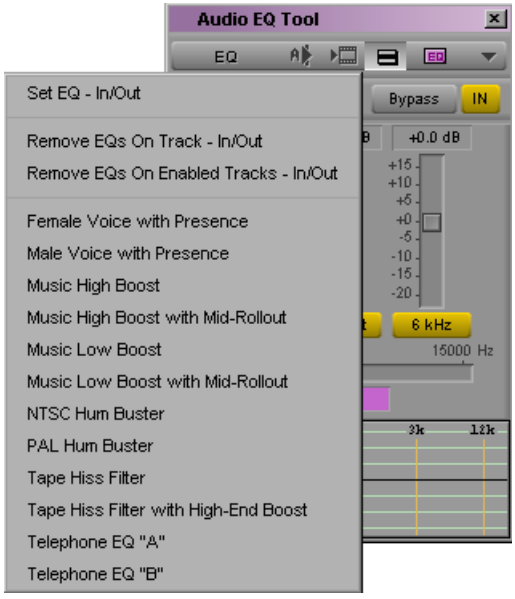
- Use the ¼-octave influence range and a large negative decibel value.
- Keep both the high shelf and low shelf set to zero.
- Use the EQ Range slider to move the center point of the parametric curve along the frequency range while you play the audio track.

Once you locate the frequency you want, you can adjust it as needed.

Using Audio EQ Templates

Your Avid editing application provides a set of predefined audio EQ templates. These templates address a number of common audio problems such as removing tape hiss or boosting the low frequency on a music track. The templates are accessible from the Fast menu on the Audio EQ tool. You can also add your own custom EQ templates to the Fast menu.

The Fast menu on the Audio EQ tool provides access to a number of predefined EQ templates, as shown in the following illustration.



The EQ templates are designed to fix problems that you often encounter with audio clips. For example, Tape Hiss Filter rolls off frequencies above 4 kHz. NTSC Hum Buster cuts the bass on frequencies that often cause hum on NTSC systems.

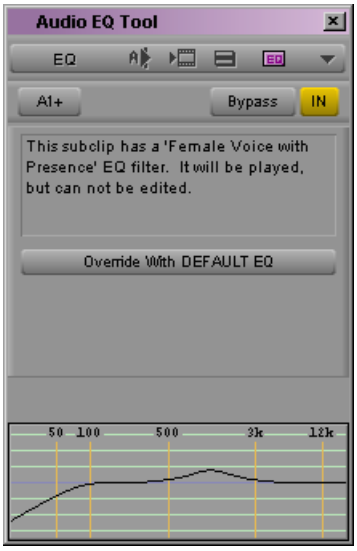
Applying an EQ Template

To apply an EQ template from the Audio EQ Tool Fast menu:

1. Move the position indicator to the audio clip in the Timeline.
2. Click the Audio EQ Tool Fast Menu button, and select the template.

   Your Avid editing application places the EQ effect on the audio clip.

The following illustration shows the contents of the Audio EQ tool when you select the Female Voice with Presence template in the Timeline. As explained in the tool, you cannot change the parameters of a predefined EQ template.



To see the parameter values of one of the EQ templates that cannot be edited, view the Console window after you apply the effect. To open the Console window, select Tools > Console.

Creating Your Own Templates

If you create an EQ effect, you can use it again as a template in another sequence or on another track.

To create your own EQ effect template:

1. Drag the effect icon from the Audio EQ tool to a bin.

   Your Avid editing application creates an EQ effect in the bin.

2. Rename the template by clicking the text and typing a new name.

Adding an EQ Template to the Audio EQ Tool Fast Menu

Your Avid editing application stores predefined EQ templates in a special bin named Site_EQs_Bin.avb. You can add your own EQ templates to the Audio EQ Tool Fast menu by storing your EQ templates in the same bin as the predefined templates.

To add an EQ template to Site_EQs_Bin:

1. Open the bin containing your EQ templates.
2. Select File > Open Bin.

   A dialog box opens.
3. Navigate to the bin named Site_EQs_Bin.avb in one of the following locations:

   (Windows) *drive*:\Program Files\Avid*Avid editing application*\SupportingFiles\Site_Effects

   (Macintosh) Macintosh HD/Applications/*Avid editing application*/SupportingFiles/Site_Effects
4. Double-click the Site_EQs_Bin.avb file.

   The Site_EQs_Bin window opens.
5. Drag one of your EQ templates into the Site_EQs_Bin window.
6. Name the template by clicking the text and typing a name.
7. Close the bin.

Your Avid editing application does not save the effect to the bin until you close the bin.

8. Click the Audio EQ Tool Fast Menu button, and look for your new template.

Adjusting EQ While Playing an Audio Effect

You can use the Audio Loop Play button to create or change an EQ effect while a clip is playing.

Use the same procedure as described in “About Adjusting Volume While Playing a Clip Gain Effect” on page 400.

If there is no existing EQ effect on the clip before you start, you do not hear any changes until you click the Audio Loop Play button to stop and replay the effect.

As you adjust the EQ values on an existing EQ effect, you might not hear the results immediately. It takes a few seconds for the changes to be applied to the clip.

To improve the response time, do one of the following:

- Monitor as few audio tracks as possible.
- Deselect the video track, if practical.
- Use IN and OUT points to choose a narrow interval to adjust.

Recording Voice-Over Narration

You can use the Audio Punch-in tool to record audio directly into the Timeline for voice-over narration.

Recording voice-over narration directly into your Avid editing application saves you the extra steps of recording the narration to tape first, capturing the narration audio to your Avid system, and then editing the audio clip into the sequence.

Audio punch-in allows you to record audio directly into the Timeline for voice-over narration.

The following topics provide more information on recording voice-over narration:

- Connecting Voice-Over Recording Hardware
- Understanding the Audio Punch-In Tool
- Recording Voice-Over Narration Using Audio Punch-in

Connecting Voice-Over Recording Hardware

Before you can record voice-over narration, you need to connect a microphone or other input device to your system. The following are typical examples:

- Connect a microphone to a mixer, and connect the mixer to the audio interface I/O device on your Avid system.
- Connect a microphone to a microphone preamplifier, and connect the preamplifier to the audio interface I/O device on your Avid system.

For information on connecting the hardware, see “Using the Avid Adrenaline,” “Using the Avid Mojo,” or “Using the Avid Mojo SDI” in the Help.

Understanding the Audio Punch-In Tool

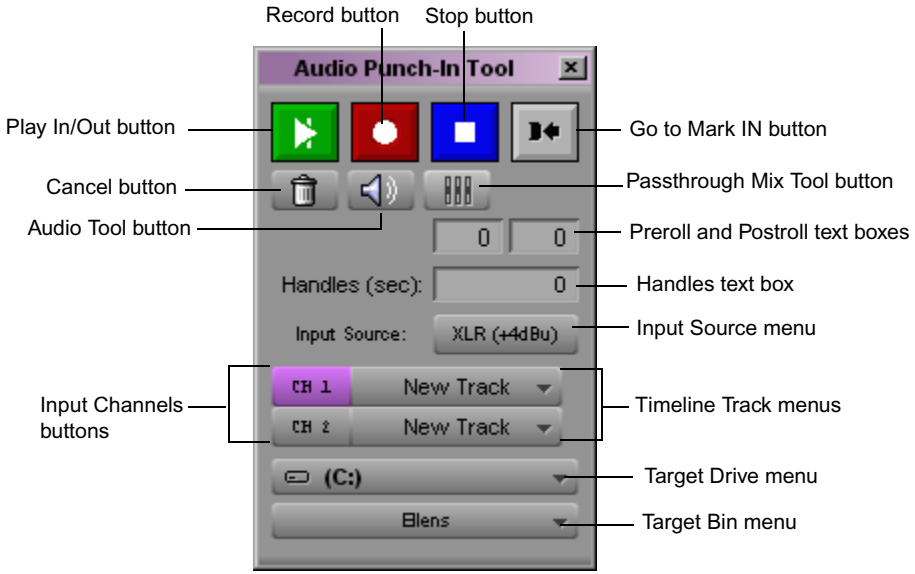
You can use the Audio Punch-in tool to record voice-over narration directly into the Timeline.

You can “rehearse” the voice-over while listening to the sequence. The voice-over is not recorded while you are rehearsing. You can continue to rehearse until you get it right. While recording, you can watch and listen to the sequence and hear the playback of edited sound tracks.

This topic describes the features of the Audio Punch-in tool and several typical scenarios for its use.

Audio Punch-in Tool Features

The following illustration shows the features of the Audio Punch-In tool. The following table describes the features of the tool.



Audio Punch-In Tool Features

Feature	Description
Play In/Out button	Starts playing with the ability to perform a real-time punch-in. The play loops from the IN point to the OUT point but stops looping once recording is done. This button blinks bright green while playing.
Record button	Starts and stops the recording. If an IN point and OUT point are set, recording automatically starts at the IN point and stops at the OUT point. This button blinks bright red while recording.
Stop button	Stops playing or recording and saves the last recorded data. This button is bright blue when recording stops.
Go to Mark IN button	Moves the position indicator to the IN point. If there is no IN point, your Avid editing application goes to where the position indicator was previously located or to the start of the sequence.
Cancel button	Stops a recording without saving the recorded data.
Audio Tool button	Opens the Audio tool so you can monitor and adjust the audio levels during recording.
Passthrough Mix Tool button	Opens the Passthrough Mix tool so you can monitor the audio levels during recording.
Preroll text box	Allows you to provide an audiovisual cue before the recording begins. Your Avid editing application backs up the position indicator for the prescribed number of seconds. You can hear the audio during preroll. When starting a punch-in with the Record button, a preroll allows you to provide the duration, in seconds, of the audiovisual cue before the recording begins.

The Record button takes precedence over preroll. During preroll, if you press the Record button, the system starts recording immediately.

Postroll text box	Allows you to provide the same kind of audiovisual cue after the recording ends as that provided by the Preroll text box before the recording begins.
Handles text box	Instructs your Avid editing application to record audio at the beginning and end of the clip. This allows you to perform trim edits on the audio. This feature applies only when you start recording with the Record button. You can record real-time punch-in only until the end of the handle.
Input Channels button	Identify the channels on the audio hardware that are used for recording. Click the appropriate button to select the channel. The button changes to pink when it is selected. Alt+click (Windows) or Option+click (Macintosh) the button to display a menu and select another channel.

Audio Punch-In Tool Features (Continued)

Feature	Description
The selected input channels are not used for playback. Do not select the same channels as mix output on the Audio Mixer tool.	
Input Source menu	Includes several optional sources for audio input, depending on your system and audio board.
To view the audio input sources available on your system, see the Input Source menu in the Input tab in the Audio Project Settings dialog box.	
Timeline Track menus	Allow you to specify where your Avid editing application places the audio in the Timeline. Select either New Track or an existing track. When you select an existing track, your Avid editing application overwrites the audio on that track and silences that portion during playback.
Target Drive menu	Allows you to choose a target drive.
Target Bin menu	Allows you to choose a target bin.

Audio Punch-in Tool Scenarios

You can punch-in audio in several ways:

- **Scenario 1** – Set only an OUT point. The position indicator is used as the IN point. Set a preroll time. Click the Play In/Out button to loop continuously through the sequence. Click the Record button when you find what you want to punch-in, and then click the Record button again to end recording.
- **Scenario 2** – Set an IN point and an OUT point around the material you want to record. Set a preroll time. Click the Record button to start the preroll. When the system arrives at the OUT point, recording ends. The last region including the OUT point is recorded. Repeat recording over the same region until you are satisfied with the results.
- **Scenario 3** – With no IN point or OUT point set, click the Record button continuously throughout your sequence. Click the Record button to start recording, and then click the Record button again to end recording. Continue this process to record multiple punch-ins.

Recording Voice-Over Narration Using Audio Punch-in

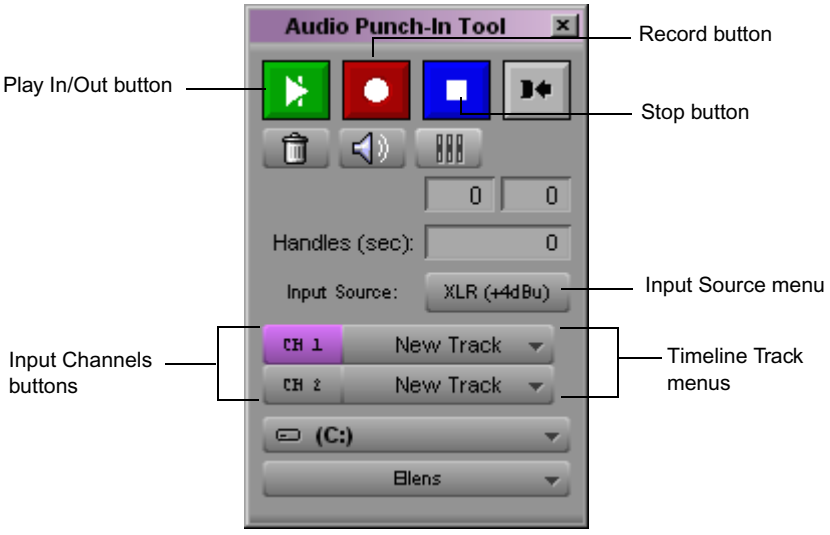
The steps below are general guidelines for recording audio punch-ins, regardless of your scenario. You should determine when to add the IN and OUT points, when to use the Play In/Out button, and when to use the Record button, based on your needs. For more information, see the scenarios described in "Understanding the Audio Punch-In Tool" on page 445.

When performing an audio punch-in, the video resolution is dropped a quarter-frame due to bandwidth limitations.

To use the Audio Punch-In tool:

1. Load a sequence into the Timeline.
2. Select Tools > Audio Punch-In.

   The Audio Punch-In tool opens.

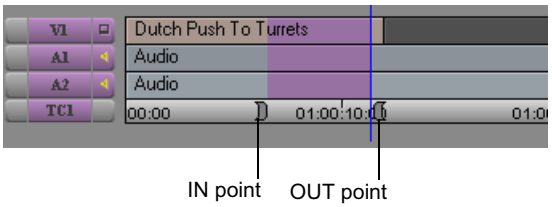


3. Select the input source and input channels that correspond to your hardware setup, and set other values in the window as appropriate.

   To select the input channels you want, click and hold the appropriate Input Channels button.

4. Click the Timeline Track menus, and select either New Track or an existing track to specify where your Avid editing application places the audio voice-over in the Timeline.

   You can replace part (or all) of an existing track, or you can create a new track for the voice-over.



5. (Option) Set IN and OUT points in the Timeline to specify the part of the sequence to which you want to add narration.
6. Click the Play In/Out button or press the V key.

   Loop play begins over the entire sequence. If you set an IN point and an OUT point, loop play begins from the IN point to the OUT point.

   The Play In/Out button blinks bright green while playing.
7. When you are ready to start the voice-over, click the Record button or press the B key.

   The Record button blinks bright red while recording, and the Play In/Out button is a steady green. The Audio Meter Channel button in the Audio tool becomes an I and changes to orange.
8. Continue to click the Record button to record additional voice-overs.

   During the audio punch-in process, you have the ability to record over the duration of the sequence or from the IN point to the OUT point.
9. Click the Stop button, or press the space bar to stop play and recording.

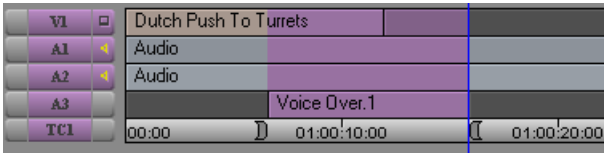
   Your Avid editing application automatically names the voice-over and saves it as an audio clip. You can change the clip name as you would for any other clip. The position indicator stops to get ready for your next voice-over.

To go to the IN point at any time, click the Go to Mark IN button.

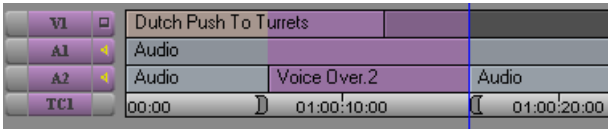
Your Avid editing application creates one master clip, regardless of how many punch-ins you perform.

The following illustrations show the results of adding a voice-over.

Voice-over adding a new track



Voice-over replacing a portion of a track



Three Undo functions can be performed during one session. The first undo removes the most recent punch-in, the second undo removes the second-to-last punch-in, and the third undo removes all the punch-ins.

To cancel an audio punch-in at any time:

- Click the Cancel button, or press the Esc or the period (.) key.

Monitoring Previously Recorded Tracks While Recording Voice-Over Narration

You can monitor previously recorded audio tracks while you record a voice-over narration.

To monitor other audio tracks:

1. Select Tools > Audio Tool.

   The Audio tool opens.

2. Click the Output Options menu, and select Mono.
3. Record your voice-over as described in "Recording Voice-Over Narration Using Audio Punch-in" on page 448.
4. As you record, monitor the previously recorded audio tracks along with your current recording from the meters in the Audio tool and from the sound on the speakers.

Using Peak Hold While Recording Voice-Over Narration

Peak Hold allows you to customize the meter displays, and sets and plays back the internal calibration tone. You can use Peak Hold while recording a punch-in as follows:

- Use the Peak Hold menu in the Audio tool to change between Peak Hold and Infinite Hold.
- Use the Reset Peak button in the Audio tool.

For more information about Peak Hold, see “Using the Audio Tool” in the Help.

Using a GPI Device with the Audio Punch-In Tool

Your Avid editing application can send signals to a V-LAN® VLX*i*® deck controller and a general-purpose interface (GPI) device that trigger GPI actions. These signals are sent when playback begins and ends, and also when recording with the Audio Punch-In tool begins and ends.

If you have a V-LAN VLX*i* deck controller and a GPI device connected to your Avid system and they are configured correctly, you can use the GPI to control additional external hardware while you are working with the Audio Punch-In tool. For example, you might want to control an indicator light in a recording studio to provide a visual cue for performers or a control light outside the studio that indicates when recording is in progress.

To make use of this feature, you must:

- Understand when your Avid editing application sends GPI trigger signals. For more information, see “Understanding GPI Trigger Signals” on page 452.
- Connect a V-LAN VLX*i* deck controller and a VLX*i*-GT GPI to your Avid system. For more information, see “Connecting a V-LAN VLXi Controller and GPI” on page 453.
- Configure the V-LAN VLX*i* deck controller and the GPI. For more information, see “Configuring a V-LAN VLXi Controller and GPI” on page 454.
- Create GPI settings for your specific needs. For more information, see “Working with GPI Settings” on page 454.

Understanding GPI Trigger Signals

Your Avid editing application sends three different GPI trigger signals under the following circumstances:

Trigger Signal Sent	When
Play Out	Playback begins. Recording with the Audio Punch-In tool ends but playback continues because a postroll value is set in the Audio Punch-In tool (that is, the signal is sent when the Stop button in the Audio Punch-In tool changes to blue).
Record Out	Recording with the Audio Punch-In tool begins.
Stop Out	Playback stops.

For more information on using the Audio Punch-In tool, see “Recording Voice-Over Narration Using Audio Punch-in” on page 448.

GPI Signal Sequences

GPI signal sequences differ, depending on whether or not you are using the Audoi Punch-In tool with preroll and postroll.

When you use the Audio Punch-In tool without any preroll or postroll, the following occurs:

- **Record Out** is sent when recording begins.
- **Stop Out** is sent when recording (and playback) ends.

When you use the Audio Punch-In tool with preroll and postroll, the following occurs:

- **Play Out** is sent when preroll begins (the position indicator begins moving in the Timeline, and the Play In/Out button in the Audio Punch-In tool blinks green).
- **Record Out** is sent when recording begins (the Record button in the Audio Punch-In tool blinks red).
- **Play Out** is sent when recording ends and postroll begins (the Stop button in the Audio Punch-In tool changes to blue).
- **Stop Out** is sent when postroll ends (the position indicator stops moving).

Record Out and Play Out repeat if you perform additional recordings.

Example of Linking GPI Actions to Trigger Signals

You can configure the GPI to respond to each signal sent by your Avid editing application in a specific manner. For a simple indicator light, you might create a GPI setting linking the Record Out signal from your Avid editing application to the GPI Set action (to turn the light on) and a setting linking the Stop Out signal from your Avid editing application to the GPI Reset action (to turn the light off).

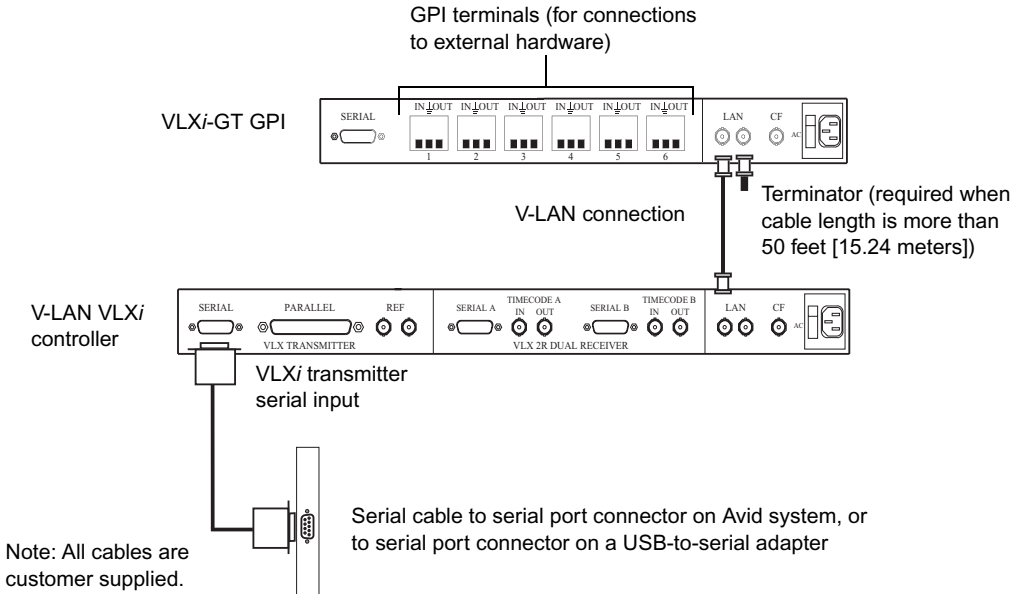
For information on GPI actions, see "Working with GPI Settings" on page 454.

If you are working with preroll and postroll values, you might also link the Play Out signal to the GPI's Pulse action to flash the light on and off repeatedly during the preroll and postroll periods. (Since the Pulse action does not switch between on and off very rapidly, your preroll and postroll durations might need to be quite long to allow for the light to flash enough times to be meaningful.)

For more information on configuring the GPI, see "Configuring a V-LAN VLXi Controller and GPI" on page 454.

Connecting a V-LAN VLX*i* Controller and GPI

The V-LAN VLX*i* controller and VLX*i*-GT GPI connect to your Avid system through a direct serial connection as shown in the following figure.



You must configure the V-LAN VLX*i* controller to work with the VLX*i*-GT GPI. Assign the VLX*i*-GT to a V-LAN node address between 16 and 19. LAN connections of more than 50 feet (15.24 meters) must have a terminator. For more information on configuring the V-LAN, see the *Videomedia VLXi User's Guide*.

Configuring a V-LAN VLX*i* Controller and GPI

Once you have connected a V-LAN VLX*i* controller and VLX*i*-GT GPI to your Avid system, you can configure the system to communicate with the controller and the GPI, and create GPI settings appropriate to your needs. For more information on creating settings, see "Working with GPI Settings" on page 454.

To configure the V-LAN VLX*i* controller and the VLX*i*-GT GPI:

1. In the Project window, double-click Deck Configuration.

   The Deck Configuration dialog box opens.

2. Click Add Channel.
3. Click the Channel Type menu, and select VLAN VLX.
4. Click the Port menu, and select the serial port to which the V-LAN VLX*i* is connected.
5. Click OK.

   The Autoconfigure message box opens.

6. Click Yes.

   The connected GPI is automatically detected and appears in the Deck Configuration dialog box.

Working with GPI Settings

You must create a separate GPI setting for each trigger signal you want the GPI to recognize. For example, you would need one setting for the Record Out signal and another for the Stop Out signal.

You can also edit an existing GPI setting or delete a GPI setting so that it no longer appears as an option in the GPI Settings dialog box.

Creating a GPI Setting

To create a GPI setting:

1. In the Project window, double-click Deck Configuration.

   The Deck Configuration dialog box opens.

2. Double-click the VLX*i*-GT text box.

   The GPI Settings dialog box opens.

3. Select the appropriate settings.

   For more information about GPI settings option, see “GPI Settings Options” on page 456.

4. Click Add.

   The GPI Node Settings dialog box opens.

5. Select the appropriate settings.

   For more information about GPI Node settings option, see “GPI Settings Options” on page 456.

6. Click OK.

   The GPI Settings dialog box opens.

7. Click OK to set the GPI.

8. Click Apply in the Deck Configuration dialog box.

GPI Settings Options

The following tables describe the GPI settings and GPI Node settings options.

GPI Settings Options

Option	Description
Name	Keep the default V-LAN VLX*i* name, or type a new name.
Description	(Option) Add a description of the GPI trigger.
Device Type	Select V-LAN, which is the Avid-supported device type.
Address	Select the V-LAN network address to which the VLX*i*-GT is assigned. Valid addresses on the V-LAN network are 16 through 19. This address must match the internal V-LAN address.
Pulse Duration	Leave this setting at its default value; it does not alter the length of the Pulse action in the GPI.
GPI Control Enable	When you deselect this option, you disable the GPI but keep the GPI settings. This is useful for troubleshooting purposes.
Edit	Click to edit an existing GPI node setting.
Delete	Click to delete an existing GPI node setting.
Add	Click to add another GPI node setting.

GPI Node Settings Options

Option	Description
Function	Select one of the three active functions: • Record Out • Play Out • Stop Out Seven options are listed, but only the three signals described in "Understanding GPI Trigger Signals" on page 452 are active.
Node	Click the Node menu, and select a node. Nodes 1 through 6 correspond to the physical connectors on the back of the VLX*i*-GT GPI device.

GPI Node Settings Options (Continued)

Option	Description
Action	Select an action: • *Set* activates a command. • *Reset* deactivates a command. • *Pulse* switches the state between active and inactive.

Editing a GPI Setting

To edit a GPI setting:

1. In the Project window, double-click Deck Configuration.

   The Deck Configuration dialog box opens.
2. Click the VLX*i*-GT text box.
3. Select the name of the GPI you want to edit.
4. Click Edit.
5. Make the applicable changes to the setting.
6. Click OK.
7. Click Apply.

   The GPI setting is updated.

Deleting a GPI Setting

To delete a GPI setting:

1. In the Project window, double-click Deck Configuration.

   The Deck Configuration dialog box opens.
2. Click the VLX*i*-GT text box.
3. Select the name of the GPI you want to delete.
4. Click Delete.
5. Click OK.
6. Click Apply.

   The GPI setting is deleted.

Displaying Audio Formats in Bins

You can select a bin heading to display the audio formats in the bin. The applicable audio format, AIFF-C, WAVE, PCM, or SDII (Macintosh), appears in the Audio Format column for master clips.

To add the Audio Format column to a bin:

1. With a bin in Text view, select Bin > Headings.

   The Bin Column Selection dialog box opens.

2. Ctrl+click (Windows) or click (Macintosh) Audio Format in the list to select it.
3. Click OK.

   The Audio Format column appears in the bin.

Chapter 14

Using AudioSuite Plug-Ins

This chapter describes how to access and use the AudioSuite plug-ins, including the set of core plug-ins that comes with your Avid editing application. It also provides a list of other plug-ins that are supported by this version.

- Understanding Digidesign AudioSuite Plug-Ins
- Core AudioSuite Plug-Ins
- Non-Core AudioSuite Plug-Ins

Understanding Digidesign AudioSuite Plug-Ins

Your Avid editing application supports AudioSuite, the Digidesign host-based, file-based plug-in specification. Users have access to audio-processing plug-ins developed by Digidesign and by Digidesign third-party developers. These plug-ins perform pitch processing, artifact removal, audio reversal, and many other processes.

For information on Digidesign and third-party plug-ins, go to the Digidesign Web site at www.digidesign.com.

For information on plug-ins that are not supported by your Avid editing application, see "AudioSuite Plug-in Limitations" on page 471.

Installing AudioSuite Plug-Ins

The installer for your Avid editing application automatically creates a Plug-Ins folder that stores AudioSuite plugins in the following location:

(Windows) *drive*:\Program Files\Common Files\Digidesign\DAE

(Macintosh) Macintosh HD/Library/Application Support/Digidesign

A set of core plug-ins is installed automatically. When you purchase additional plug-ins, the third-party vendor provides instructions on how to load the plug-ins. Some vendors might require you to drag the plug-in to the Plug-Ins folder; other vendors might perform the task automatically for you by using an installation program.

Your Avid editing application requires the files in this folder named AvidAppPlugIn.dpm and AvidAppPlugIn.dpm.rsr (Windows) or Avid_Application_PlugIn (Macintosh). Do not delete them.

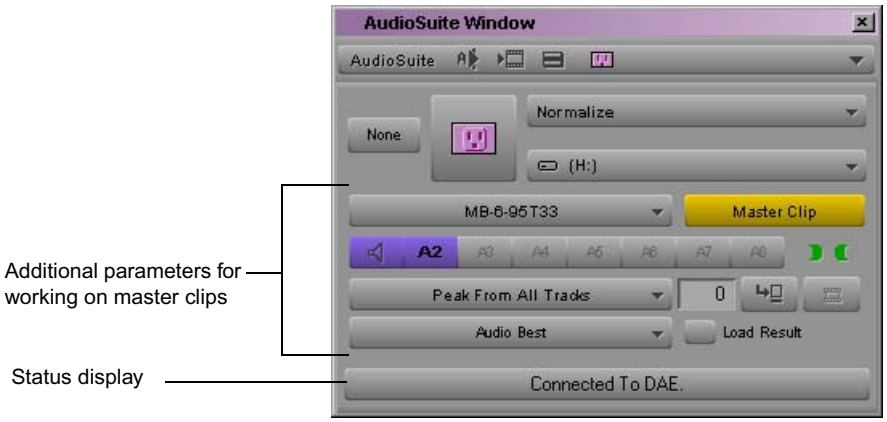
AudioSuite Plug-ins supported by Avid are added to the Plug-In Selection menu in the AudioSuite window. If you install a plug-in that is not officially supported by Avid, the plug-in name is still added to the Plug-In Selection menu, but a ~ character precedes the name, informing you that this plug-in is not supported. If you attempt to use the plug-in, a dialog box appears informing you that this plug-in is not supported and might cause an error.

Using Digidesign AudioSuite Plug-Ins

You can use AudioSuite plug-ins in two different ways. You can

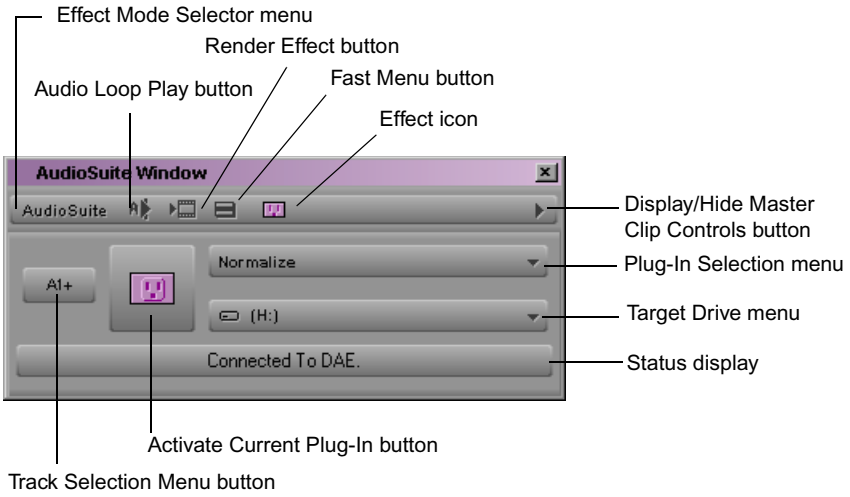
- Apply a plug-in to a clip in the Timeline. The end result is a rendered effect. For more information, see “Applying an AudioSuite Plug-in to a Clip in the Timeline” on page 461.
- Use the controls in the AudioSuite window to create a new master clip. This method allows you to process more than one channel at a time and to create new media that is longer or shorter in duration than the source media. For more information, see “Creating New Master Clips with AudioSuite Plug-Ins” on page 464.

By default, the AudioSuite window displays the controls for applying a plug-in to a clip in the Timeline. When you drag a master clip into the window, the window expands to display additional parameters for working with master clips. The following illustration shows the expanded view.



Applying an AudioSuite Plug-in to a Clip in the Timeline

The following illustration shows the default layout of the AudioSuite window.



To apply an AudioSuite plug-in to a clip in the Timeline:

1. Open the AudioSuite window by doing one of the following:
   - Select Tools > AudioSuite.
   - If an audio tool is already open, click the Effect Mode Selector menu, and select AudioSuite.
2. Use the Track Selection Menu button to select the tracks that you want to modify. When you select an item from this menu, the system selects or deselects the corresponding track in the Timeline.

To select multiple tracks, press the Shift key while you select additional tracks from the Track Selection menu. The tracks are designated by plus signs (+), which indicate that the effect is applied to more than one track.

3. Click the Plug-In Selection menu, and select a plug-in.

   Your Avid editing application automatically applies the plug-in effect to the track or tracks in the Timeline.
4. Click the Activate Current Plug-In button.

   A dialog box associated with the plug-in opens.
5. Make any necessary adjustments, and click the Preview button to preview the effect. For more information, see "Using an AudioSuite Plug-In Dialog Box" on page 463.
6. To save the effect, click OK. To close the dialog box without saving the effect, click Cancel.
7. (Option) To save the effect as a template, drag the effect icon to a bin.

If you want to use plug-ins that operate on stereo pairs or that change the length of the audio clip, use the methods described in "Creating New Master Clips with AudioSuite Plug-Ins" on page 464.

Using an AudioSuite Plug-In Dialog Box

The contents of the plug-in dialog boxes vary, but the top six buttons are always visible. If a particular button is not available, it appears dimmed. The following illustration shows the Digidesign Gain plug-in.

These six buttons appear on all AudioSuite Plug-In dialog boxes.

The following table describes the six common buttons:

Button	Description
OK	Saves the effect and closes the dialog box.
Cancel	Closes the dialog box and does not save the effect.
Preview	Plays back a portion or all of the currently selected audio clip with processing. Some plug-ins can preview in real time and some cannot. If a plug-in cannot preview in real time, your Avid editing application plays back the processed audio in 2-second intervals: it processes 2 seconds of audio, plays it, processes the next 2 seconds, plays it, and so on.
Render	Renders the effect and creates a new audio media file.
Bypass	Plays the selected audio without processing. This is useful for comparing the audio with and without processing applied.
Find level	Performs an analysis pass on the audio. Depending on the plug-in, the text and function of this button might change.

Some plug-ins require an analysis pass on the audio data before they can process the information. If so, they perform the first pass automatically. Other plug-ins do not require a first pass but can achieve more accurate results if you allow them to perform a first pass. If the plug-in supports the optional pass, this button is available. Otherwise, it is dimmed.

AudioSuite Fast Menu

The AudioSuite Fast menu allows you to perform the following tasks:

- Apply an existing AudioSuite template. See “Using AudioSuite Effect Templates” on page 469.
- Set, render, or remove AudioSuite plug-ins. The menu text differs, depending on whether you have IN to OUT points in the sequence.

The following commands appear in the menu:

- **Global:** There are no IN points on the segment. The command affects all the plug-ins on the enabled tracks.
- **IN/OUT:** There are IN to OUT points on the segment. The command affects the plug-ins on the enabled tracks within the marked region.
- **From IN:** There is an IN point and no corresponding OUT point. The command affects all plug-ins on enabled tracks, starting with the IN point.

Rendering AudioSuite Plug-in Effects

You need to render all AudioSuite plug-ins before you can play back the effect. If you do not render the effect manually, your Avid editing application automatically renders the effect before it creates an audio mixdown or audio dissolve containing the effect.

For more information, see “Troubleshooting AudioSuite Plug-Ins” on page 471.

Creating New Master Clips with AudioSuite Plug-Ins

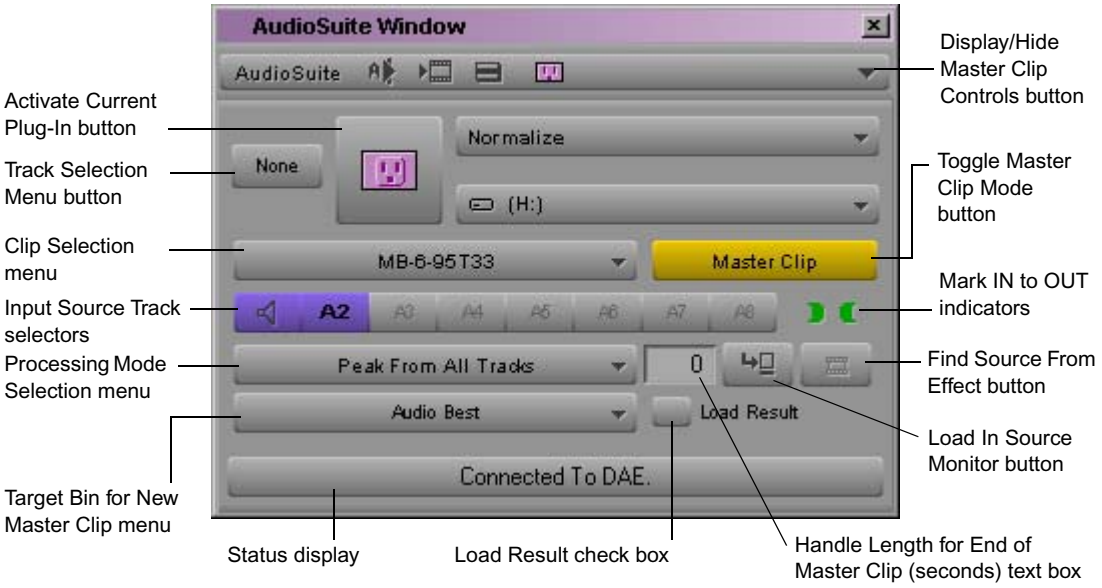
You can use AudioSuite plug-ins to create new master clips. This allows you to use multiple input and output channels and to change the length of the media. You can perform the following operations on the media you create:

- Apply AudioSuite plug-ins to more than one track (also referred to as a channel or stream) at the same time. For example, a plug-in might allow you to process two separate tracks as a stereo pair. This enables you to use plug-ins that perform linked compression, reverb, and other effects that allow multichannel input.
- Create new media that is longer or shorter in duration than the source media. This allows you to use effects that perform time compression and expansion. For example, you can use a Time Compression Expansion plug-in to change the length of the audio file, or you can lengthen the file in order to add a reverb trail.
- Apply one mono AudioSuite effect to multiple inputs of a master clip in a multiple-mono fashion.

AudioSuite Controls for Creating New Master Clips

When you drag a master clip onto the AudioSuite window, the window automatically expands to display additional controls. You can also click the Display/Hide Master Clip Controls button to display or hide the additional parameters.

The following illustration identifies the controls that appear when you expand the AudioSuite window.



The following table describes the controls in the AudioSuite window.

AudioSuite Window Controls

Control	Description
Track Selection Menu button	This menu is not active in Master Clip Processing mode.
Clip Selection menu	This menu allows you to choose the active clip. It lists the current active clip and other clips you dragged into the AudioSuite window. The window controls change to reflect the active clip.
Input Source Track selectors	These buttons allow you to choose the input source tracks for the effect. The system automatically chooses a preview track and displays a blue Speaker icon on the track. To change the preview track, Alt+click (Windows) or Option+click (Macintosh) the appropriate source track. If the source track that is set as the current preview track is deselected, the system chooses the lowest available track.
Processing Mode Selection menu	This menu displays the current processing mode of the AudioSuite effect on a given clip. For more information, see "Mono, Stereo, and Multichannel Processing in AudioSuite Plug-Ins" on page 467.
Target Bin for New Master Clip menu	This menu allows you to choose the target bin. The system will place the new media and a corresponding AudioSuite effect template in the bin. The template allows you to modify the effect at a later time.
Toggle Master Clip Mode button	This button activates the master clip processing mode. The button is yellow when master clip processing mode is active.
Mark IN to OUT indicators	These lights change to green when a mark IN or mark OUT exists on the current master clip.
Find Source From Effect button	his button allows you to find the master clip associated with an AudioSuite template. When you drop an AudioSuite effect template into the AudioSuite window, the system activates this button. Click the button to load the master clip into the AudioSuite window as the active master clip. *The template you drop in the window must reference an existing master clip.*
Load In Source Monitor button	This button loads the current source master clip into the Source monitor. This is useful if you want to add or change IN to OUT points on the clip.
Load Result check box	This check box enables you to instruct the system to automatically load the resulting master clip into the Source monitor.

AudioSuite Window Controls (Continued)

Control	Description
Handle Length for End of Master Clip (seconds) text box	This text box allows you to add filler at the end of a master clip. The value represents the number of seconds to add. For example, use this feature to add filler at the end of a master clip when you use a reverb effect to add a reverb trail to the end of the clip. Select the value before you run the plug-in.
Status display	This display provides information about the current state of the Digidesign Audio Engine (the software that manages the AudioSuite plug-ins) and the currently applied effect. For stereo and multichannel processing plug-ins, the Status display identifies the maximum number of tracks that can be processed. If more than the maximum are initially selected, the system automatically disables tracks until it reaches the plug-in's maximum number. *On the Macintosh, you can Command+click the status display to close the Digidesign Audio Engine. This might reclaim a small amount of system memory, expecially if you have a large number of AudioSuite plug-ins installed. However, when you close the Digidesign Audio Engine in this way, the Status display changes to "Must relaunch application to reconnect to DAE," and you cannot start the Digidesign Audio Engine again without quitting and reopening the editing application.*

Mono, Stereo, and Multichannel Processing in AudioSuite Plug-Ins

AudioSuite plug-ins allow you to select the following types of processing:

- **Mono processing only:** This option is available for plug-ins that operate on only one audio track at a time. The other option (Stereo) appears dimmed. The plug-in applies the effect to each source track individually, in a serial manner.
- **Mono and stereo processing:** These options are available for plug-ins that can treat two tracks as a stereo pair. This allows the system to apply the audio effect simultaneously to each track. For example, the Time Compression Expansion plug-in typically operates on a stereo pair. You can choose mono if you want the plug-in to operate on each track individually, in a serial manner.
- **Mono and multichannel processing:** These options are available for plug-ins that can process multiple tracks simultaneously. For example, the Normalize plug-in allows you to adjust the volume separately for each track or to adjust the volume for all tracks at the same time. In the latter case, the system examines all enabled tracks for the loudest volume and then adjusts all tracks relative to that value.

You can think of stereo processing as a special case of multichannel processing.

For mono processing, the system creates a new master clip with the same number of tracks that you selected in the AudioSuite window.

For stereo and multichannel processing, the plug-in creates a master clip with the number of tracks equal to the number of output streams from the plug-in. For example, a plug-in that operates on stereo pairs creates a two-channel master clip. A plug-in such as Normalize, that operates on multiple channels, creates a master clip with the same number of tracks that were selected in the AudioSuite window.

The Status display at the bottom of the AudioSuite Plug-in window indicates how many tracks the plug-in can process. If more tracks are enabled than can be processed, the plug-in automatically selects the correct number of tracks. You can change the track selection based on your needs.

Most AudioSuite plug-ins automatically select the appropriate processing mode and label the values in the Processing Mode Selection menu. For example, the Normalize plug-in offers two choices: Peak On Each Track and Peaks From All Tracks (default).

You select the processing mode from a menu in the AudioSuite window as described in the next section.

Using AudioSuite Plug-ins to Create New Master Clips

To create new master clips using the AudioSuite plug-ins:

1. Drag one or more master clips or subclips into the AudioSuite window.

   Your Avid editing application automatically enters Master Clip Processing mode and expands the AudioSuite window, if necessary.

   You can click the Display/Hide Master Clip Controls button to display or hide the controls for processing a master clip. To enter or exit Master Clip Processing mode, click the Toggle Master Clip Mode button. The button is yellow when Master Clip Processing mode is active.

2. If you dropped more than one master clip in the AudioSuite window, select a clip to work on from the Clip Selection menu.
3. Select the input sources from the Input Source Track selectors.
4. (Option) Alt+click (Windows) or Option+click (Macintosh) the Input Source Track selector to change the preview source track.
5. (Option) Type a value in the Handle Length text box to lengthen the clip by a specific amount. For example, type 2 if you plan to add a 2-second reverb trail.

If you are using Time Compression/Expansion plug-ins, the plug-ins automatically lengthen or shorten the clip.

6. Click the Plug-In Selection menu, and select a plug-in.
7. Click the Activate Current Plug-In button to open the plug-in's dialog box. For more information, see "Using an AudioSuite Plug-In Dialog Box" on page 463.
8. Make any changes, and click the Preview button to preview the effect.
9. Either render the plug-in from the Plug-In dialog box, or return to the AudioSuite window. For more information on rendering, see "Rendering AudioSuite Plug-in Effects" on page 464.

   When you click the Render Effect button, your Avid editing application creates a new master clip in the target bin. Your application names the new master clip by combining the original clip name with the effect name, for example, Test Audio clip_Normalize (Windows) or QuietClip.Normalize (Macintosh).

   Your Avid editing application also creates an AudioSuite effect template in the bin as described in "Using AudioSuite Effect Templates" on page 469.

Using AudioSuite Effect Templates

When you create a new master clip, your Avid editing application also creates an AudioSuite effect template in the bin. This effect template contains a reference to the original master clip to which the effect was applied.

Your Avid editing application names the template as follows:

- (Windows) The original clip name is combined with the effect name, for example, Test Audio clip - AudioSuite Plug-In Effect: Normalize.
- (Macintosh) An effect file name extension is added to the effect name, for example, QuietClip.NormalizeQuietClip.Normalize.effect.

The template is useful if you want to modify the effect after it is created.

To use a template to modify a master clip:

1. Drag an AudioSuite plug-in template into the AudioSuite window.

   The Find Source From Effect button becomes active.
2. Click the Find Source From Effect button to load the master clip into the AudioSuite window.

   If a corresponding master clip exists, the system loads the master clip with its associated plug-in values.
3. Modify the effect as described in "AudioSuite Controls for Creating New Master Clips" on page 465.

To add a template to the AudioSuite Fast menu:

1. Open the bin containing your AudioSuite templates.
2. Select File > Open Bin.

   A dialog box opens.
3. Navigate to the AudioSuite Site bin file in the following location:

   (Windows) *drive*:\Program Files\Avid*Avid editing application*\SupportingFiles\Site_Effects\Site_AudioSuite_Bin.avb

   (Macintosh) Macintosh HD/Applications/*Avid editing application*/SupportingFiles/Site_Effects/Site_AudioSuite_Bin
4. Double-click the Site_AudioSuite_Bin file.

   The Site_AudioSuite_Bin window opens.
5. Drag one of your AudioSuite templates to the Site_AudioSuite_Bin window.
6. If you have not already done so, name the template by clicking the text and typing a name.
7. Close the bin.

Your Avid editing application does not save the effect to the bin until you close the bin.

8. Click the AudioSuite Fast Menu button, and look for your new template.

Using AudioSuite Plug-Ins in Stereo

Some AudioSuite plug-ins can be used in either mono or stereo. If you plan to use them in stereo, be aware of the following:

- To process a mono track and obtain a stereo result, select the desired track or mark an IN point and OUT point, then either select an empty track or add an new one. When you process the audio, the result will be two tracks or regions that represent the right and left channels of the processed audio. You should then pan these tracks hard right and hard left in your mix.
- If you set a plug-in to Stereo mode, then select an odd number of tracks for processing, the plug-in will process the selected tracks in pairs to create the stereo effect. However, the last odd, unpaired track will be processed as mono, using the left channel settings of the stereo plug-in. If you want the last track to be processed in stereo, you must select an additional track to pair it with — an empty one, if necessary.

AudioSuite Plug-in Limitations

The following limitations apply to the AudioSuite plug-ins:

- Some plug-ins that perform analysis passes on the audio data are not supported. This includes plug-ins that use playlist information to cache analysis data.
- If you want to use plug-ins that change the length of an audio clip or that operate on multiple inputs at the same time, use the method described in "Creating New Master Clips with AudioSuite Plug-Ins" on page 464. Applying an effect to a clip in the Timeline does not work for these operations.

Troubleshooting AudioSuite Plug-Ins

You might need to respond to an error message or cancel a render operation when rendering AudioSuite plug-ins.

If the Digidesign Audio Engine is not running when you start to render an AudioSuite plug-in effect, the system displays an error message stating that the DAE connection does not exist. The dialog box gives you the following options:

- *Cancel* stops the rendering process. This allows you to open the AudioSuite tool and then start rendering again.
- *Bypass* continues the rendering process but doesn't render the plug-in effect.

In most cases, you should click Cancel and open the AudioSuite window.

If the plug-in is not installed when you go to render a plug-in effect, your Avid editing application displays an error message and tells you which plug-in is not installed. At that time, you can cancel or bypass the rendering process as previously described.

To cancel a render operation:

▶ Press Ctrl+period (Windows) or Command+period (Macintosh).

Be careful not to press these keys multiple times. If you press Ctrl+period (Windows) or Command+period (Macintosh) after the render operation has been stopped [from a previous Ctrl+period (Windows) or Command+period (Macintosh)], your Avid editing application closes the window after it cancels the render operation.

Core AudioSuite Plug-Ins

A set of core AudioSuite plug-ins are installed with your Avid editing application. AudioSuite Plug-ins supported by Avid, such as the core set, are added to the AudioSuite Plug-in Selection menu using their plug-in name. If you install a plug-in that is not officially supported by Avid, the plug-in name is still added to the AudioSuite Plug-in Selection menu, but a ~ character precedes the name, informing you that this plug-in is not supported. If you attempt to use the plug-in, a dialog box appears informing you that this plug-in is not supported and might cause an error.

Other AudioSuite plug-ins might get installed on your system for use with ProTools, or you might download plugins. These plug-ins might not work correctly with your Avid application, and are not supported by Avid. Use any unsupported plug-ins at your own risk.

The following table provides a brief description of each of the core AudioSuite plug-ins, with cross-references to more detailed information in the remaining topics in this section.

You can use some AudioSuite plug-ins in either mono or stereo. For guidance on working in stereo, see "Using AudioSuite Plug-Ins in Stereo" on page 470.

Core AudioSuite Plug-Ins

Plug-In	Description
Chorus	Provides time-delay and pitch-shift effects, added to the clip to create a multi-layered sound. For more information, see "Chorus AudioSuite Plug-In" on page 474.
D-Verb™	Provides a studio-quality reverberation or ambience processing to single or multiple tracks. For more information, see "D-Verb AudioSuite Plug-In" on page 476.
Compressor	Reduces the dynamic range of signals that exceed a selected threshold by a specific amount. For more information, see "Compressor AudioSuite Plug-In" on page 477.
Limiter	Prevents signal peaks from exceeding a chosen level so that they don't overload amplifiers or recording devices. For more information, see "Limiter AudioSuite Plug-In" on page 479.
Expander-Gate	Performs the same function as the Gate plug-in with the addition of expander features. Expanders are particularly useful for reducing noise or signal leakage that creeps into recorded material as the signal level falls, which often occurs with headphone leakage. For more information, see "Expander-Gate AudioSuite Plug-In" on page 480.
Gate	Reduces noise by decreasing the gain of signals that fall below a user-selectable threshold. For more information, see "Gate AudioSuite Plug-In" on page 482.

Core AudioSuite Plug-Ins

Plug-In	Description
DeEsser	Reduces sibilants (“s,” “sh,” and “ch” sounds) and other high-frequency noises that can cause distortion in audio signals. For more information, see “DeEsser AudioSuite Plug-In” on page 483.
EQ	Allows you to adjust frequency equalization on individual audio clips. Four EQ plug-ins are available: 1-Band EQ II, 4_Band EQ II, 1-Band EQ III, and 7-Band EQ III. For more information, see “EQ AudioSuite Plug-Ins” on page 484.
Flanger	Creates a flange effect that approximates a true tape-generated flange. For more information, see “Flanger AudioSuite Plug-In” on page 489.
Invert	Inverts the polarity (phase) of the audio file. For more information, see “Invert AudioSuite Plug-In” on page 490.
Duplicate	Creates a new master clip from a selected audio clip. The plug-in uses the IN and OUT points on the selected clip to define the boundaries of the new clip. For more information, see “Duplicate AudioSuite Plug-In” on page 490.
Delay	Provides time-delay-based effects. Effects obtained through the use of Delay include slap echo, doubling, chorusing, and flanging. For more information, see “Delay AudioSuite Plug-In” on page 491.
Multi-Tap Delay	Allows you to control up to four independent delays applied to the audio clip. For more information, see “Multi-Tap Delay AudioSuite Plug-In” on page 492.
Normalize	Finds the peak value in the source audio file and scales the entire file proportionally to that maximum value. For more information, see “Normalize AudioSuite Plug-In” on page 493.
Gain	Same as Normalize, but allows positive or negative gain adjustment. For more information, see “Gain AudioSuite Plug-In” on page 493.
Ping-Pong Delay	Allows you to add a delay to an audio clip to create a ping-pong echo effect. For more information, see “Ping-Pong Delay AudioSuite Plug-In” on page 494.
Reverse	Rewrites the selected audio in reverse. For more information, see “Reverse AudioSuite Plug-In” on page 494.
DC Offset Removal	Removes an audio artifact that is common in digital audio files. A DC offset is caused by poorly calibrated analog-to-digital converters (A/Ds), and can produce clicks and pops on clip edit transitions if not removed. For more information, see “DC Offset Removal AudioSuite Plug-In” on page 495.
Signal Generator	Produces audio test tones in a variety of frequencies, waveforms, and amplitudes. For more information, see “Signal Generator AudioSuite Plug-In” on page 495.

Core AudioSuite Plug-Ins

Plug-In	Description
Time Compression Expansion	Allows you to adjust the duration of a selected clip by creating a new master clip. This increases or decreases the selection's length without changing pitch. For more information, see "Time Compression Expansion AudioSuite Plug-In" on page 495.
Pitch Shift	Changes pitch with or without changing length. For more information, see "Pitch Shift AudioSuite Plug-In" on page 498.
Time Shift	Adjusts both the duration and the pitch of a selected clip. For more information, see "Time Shift AudioSuite Plug-In" on page 499.

Chorus AudioSuite Plug-In

The Chorus plug-in modifies an audio signal by combining a time-delayed, pitch-shifted copy with the original signal. It is ideal for thickening and adding a shimmering quality to guitars, keyboards, and other instruments.

Chorus Parameters

The following table lists the Chorus plug-in parameters:

Parameter	Description
Gain	Allows you to adjusts the input volume of the chorus to prevent clipping or increase the level of the processed signal. This slider is set to a default of +3 dB. If your source audio has been recorded very close to peak level, this +3 dB default setting could cause clipping. Use this control to reduce the input level.
Sum Inputs button	When you use the Chorus plug-in in Stereo mode, a Sum Inputs button appears next to the right channel Gain slider. Clicking the Sum Inputs button sums the source input signals (regardless of whether the input is mono or stereo) before processing them.The source signal then appears in the center of the stereo field, and the processed signal is output in stereo. When you click the Sum Inputs button, the LFO waveform on the right channel is automatically phase inverted to enhance the mono-stereo effect.
Mix	Allows you to adjust the balance between the Dry (source) signal and the Wet (processed) signal, giving you control over the depth of the effect.
Low Pass Filter	Controls the cutoff frequency of the Low Pass Filter, allowing you to attenuate the high frequency content of the feedback signal. The lower the setting, the more high frequencies are removed from the feedback signal. The range of the Low Pass Filter is 20 Hz to 19.86 kHz, with a maximum value of Off (which effectively means bypass).
Delay	Sets the delay time between the source signal and the processed signal. The higher the setting, the longer the delay and the wider the chorusing effect. Delay is adjustable from 0 to 20 milliseconds.
LFO Rate	Allows you to adjust the rate of the low frequency oscillator (LFO) applied to the delayed signal as modulation. The higher the setting, the more rapid the modulation. You can select either a sine wave or a triangle wave as a modulation source, using the LFO Waveform selector.
LFO Width	Allows you to adjust the intensity of the LFO applied to the delayed signal as modulation. The higher the setting, the more intense the modulation. Use the LFO Waveform selector to select a sine or a triangle wave as a modulation source.
Feedback	Controls the amount of feedback applied from the output of the delayed signal back into its input. Negative settings provide a more intense effect.
LFO Waveform	Selects a sine wave or triangle wave for the LFO. This affects the character of the modulation. The sine wave has a gentler ramp and peak than the triangle wave.

D-Verb AudioSuite Plug-In

Digital reverberation processing can simulate the complex natural reflections and echoes that occur after a sound has been produced. Reverberation can take relatively lifeless mono source material and create a stereo acoustic environment that gives the source a perceived weight and depth in a mix. In addition, digital signal processing can be used creatively to produce reverberation characteristics that do not exist in nature.

The character of reverberation depends on a number of factors. These include proximity to the sound source, the shape of the space, the absorptivity of the construction material, and the position of the listener. D-Verb provides control over these reverberation parameters so that extremely natural sounding reverb effects can be created and applied.

D-Verb Parameters

The D-Verb plug-in has the following parameters:

Parameter	Description
Input	Allows you to adjust the input volume of the reverberation.
Mix	Allows you to adjust the balance between the Dry (source) signal and the Wet (processed) signal, giving you control over the depth of the effect.
Algorithm	Allows you to select one of seven reverberation algorithms. Selecting an algorithm changes the preset provided for it. • **Hall —** Good, general-purpose concert hall with a natural character • **Church —** Dense, diffuse space simulating a church or cathedral • **Plate —** Simulation of the acoustic character of a metal plate–based reverberation, which has the general effect of thickening the initial sound itself • **Room 1 —** Medium-sized, natural, rich-sounding room that can be effectively varied in size between very small and large • **Room 2 —** Smaller, brighter reverberant characteristic than Room 1, with a useful adjustment range that extends to very small • **Ambient —** Transparent response useful for adding a sense of space without adding a lot of depth or density • **Nonlin —** Nonlinear reverberation with a natural buildup and an abrupt cutoff similar to a gate
Size	In conjunction with the Algorithm parameter, allows you to adjust the overall size of the reverberant space. There are three sizes: Small, Medium, and Large. The character of the reverberation changes with each setting (as does the relative value of the Decay parameter).

Parameter	Description
Diffusion	Sets the degree to which initial echo density increases over time. High settings result in high initial buildup of echo density. Low settings cause low initial buildup. This control interacts with the Size and Decay parameters to affect the overall reverberation density.
Decay	Controls the rate at which the reverberation decays after the original direct signal stops. The value of the Decay parameter is affected by the Size and Algorithm parameters. This parameter can be set to infinity on most algorithms for infinite reverberation times.
Pre-Delay	Allows you to determine the amount of time that elapses between the original audio event and the onset of reverberation.
HF (High Frequency) Cut	Controls the decay characteristic of the high frequency components of the reverberation. It acts in conjunction with the LP Filter control to create the overall high frequency contour of the reverberation.
LP Filter	Controls the overall high frequency content of the reverberation by allowing you to set the frequency above which a 6-dB-per-octave filter attenuates the processed signal.

Compressor AudioSuite Plug-In

The Compressor plug-in reduces the dynamic range of signals that exceed a selected threshold by a specific amount. The increase of input signal needed to cause a 1-dB increase in the output signal of the compressor is called the compression ratio. With a ratio of 4:1, for example, an 8-dB increase of input produces a 2-dB increase in the output.

Audio material often varies in loudness, and can be above the threshold at one moment and below it the next. The Attack slider sets the Compressor's response time, or attack. The Release slider sets the amount of time that it takes for the Compressor's gain to return to its original level.

Using Compression Effectively

To use compression most effectively, the attack time should be set so that signals exceed the threshold level long enough to cause an increase in the average level. This helps to ensure that gain reduction doesn't decrease the overall volume.

Release times should be set long enough so that if signal levels repeatedly rise above the threshold, they cause gain reduction only once. If the release time is too long, a loud section of the audio material could cause gain reduction that persists through a soft section. Of course, compression has many creative uses that break these rules.

The Compressor has built-in metering that allows you to monitor the amount of gain reduction taking place. The Gain Reduction meter usually remains at 0-dB level when the input signal is below the threshold, and falls to the left to show the amount of gain reduction in decibels when the input signal exceeds the threshold.

Compressor Parameters

The following table lists the Compressor plug-in parameters.

Parameter	Description
Input	Indicates the level of the unprocessed input signal to the Compressor.
Output	Indicates the output level of the Compressor, including any gain compensation added through the Gain parameter.
Reduction	Indicates the amount of gain reduction in dB.
Gain	Provides overall output gain adjustment. It allows you to compensate for heavily compressed signals.
Threshold	Allows you to set the threshold level. Signals that exceed this level are compressed. Signals that are below it are unaffected. A level setting of 0 dB is equivalent to no compression. Unlike scales on analog compressors, metering scales on a digital device reflect a 0-dB value, which indicates full scale (FS) — the full-code signal level. There is no headroom above 0 dB.
Ratio	Allows you to set the compression ratio. The range is based on decibels above the threshold. If this parameter is set to 2:1, for example, it compresses changes in signals above the threshold by one half.
Attack	Allows you to set the Compressor's attack time. The smaller the value, the faster the attack. The faster the attack, the faster the Compressor applies attenuation to the signal. If you use fast attack times and heavy limiting, you should use a proportionally longer release time, particularly with material that contains many peaks in close proximity.
Release	Allows you to control how long it takes for the Compressor to be fully deactivated after the input signal drops below the threshold level. If you use heavy compression, you should use proportionally longer release times. This prevents pumping, which might occur when the Compressor is forced to jump back and forth between compressed and uncompressed signal levels. Lengthening the release time helps smooth these changes in level by introducing a lag in the ramp-up and ramp-down times of attenuation. Use shorter release times on material with few peaks that do not occur in close proximity to each other.
Knee	Allows you to set the rate at which the compressor reaches full compression once the threshold has been exceeded. This parameter ranges from 0 (hardest response) to 200 (softest response).
Graph	Displays the response curve set by the Compressor's Threshold, Ratio, and Knee settings. As you adjust these parameters, refer to the graph to see how the shape of this curve changes. It allows you to see the effect of your settings.

Parameter	Description
External Key	This parameter has no effect on the AudioSuite plug-ins.
Key Listen	This parameter has no effect on the AudioSuite plug-ins.

Limiter AudioSuite Plug-In

The Limiter plug-in is used to prevent signal peaks from exceeding a chosen level so that they don't overload amplifiers or recording devices. Most limiters have ratios of 10:1 or 20:1, although some provide ratios of up to 100:1. Large ratios effectively limit the dynamic range of the signal to a specific value by setting an absolute ceiling for the dynamic range.

Limiting is used to prevent short-term peaks from reaching their full amplitude. Used carefully, limiting allows you to achieve higher average levels while avoiding overload (clipping or distortion) by limiting some short-term transients in the source audio. To prevent the ear from hearing the gain changes, use extremely short attack and release times.

Limiting is used to remove occasional peaks because gain reduction on successive peaks wouldn't be noticeable. If audio material contains many peaks, the threshold should be raised and the gain manually reduced so that only occasional, extreme peaks are limited.

The Limiter's ratio is internally set to 100:1 and the attack time is automatically set to 0 milliseconds. The Limiter is similar to heavy compression. It can be useful for reducing pops and clicks, or for hard-limiting dynamic range for broadcast or band-limited media such as a cassette.

Limiter Parameters

The following table lists the Limiter plug-in parameters.

Parameter	Description
Input	Indicates the level of the unprocessed input signal to the Limiter.
Output	Indicates the output level of the Limiter, including any gain compensation added through the Gain parameter.
Reduction	Indicates the amount by which the signal is being attenuated.
Gain	Provides overall output Gain adjustment.
Threshold	Allows you to set the threshold level. Signals that exceed this level are limited. Signals that are below it are unaffected.

Parameter	Description
Attack	Allows you to set the Limiter's attack time. The smaller the value, the faster the attack. The faster the attack, the faster the Limiter applies attenuation to the signal. If you use fast attack times and heavy limiting, you should use a proportionally longer release time, particularly with material that contains many peaks in close proximity.
Release	Allows you to control how long it takes for the Limiter to be fully deactivated after the input signal drops below the threshold level. If you use heavy limiting, you should use proportionally longer release times.This prevents pumping, which can occur when the Limiter is forced to jump back and forth between limited and unlimited signal levels. Lengthening the release time helps smooth these changes in level by introducing a lag in the ramp-up and ramp-down times of attenuation. Use shorter release times on material with few peaks that do not occur in close proximity to each other.
Graph	Displays the response curve set by the Limiter's Threshold setting. As you adjust this parameter, refer to the graph to see how the shape of this curve changes. It allows you to see the effect of your settings.
External Key	This parameter has no effect on the AudioSuite plug-ins.
Key Listen	This parameter has no effect on the AudioSuite plug-ins.

Expander-Gate AudioSuite Plug-In

The Expander-Gate plug-in reduces noise by decreasing the gain of signals that fall below a user-selectable threshold. Expanders are particularly useful for reducing noise or signal leakage that creeps into recorded material as its level falls, which often occurs with headphone leakage.

Expanders can be thought of as soft-noise gates because they provide a gentler way of cutting off noisy low-level signals than the typically abrupt cutoff of a gate. If you want, however, you can use this plug-in as a gate by setting the Ratio to its maximum value and using short Attack, Decay, and Hold settings.

Expander-Gate Parameters

The following table lists the Expander-Gate plug-in parameters.

Parameter	Description
Reduction	Indicates the amount of signal reduction in dB.
Threshold	Allows you to set the threshold level. Signals that fall below the threshold are reduced in gain. Signals that are above it are unaffected. (When you adjust the Threshold slider, be sure that audio material is playing through the Expander-Gate to see changes reflected in the Reduction meter.)
Ratio	Allows you to set the amount of expansion. If this parameter is set to 2:1, for example, it lowers signals below the threshold by one half. At higher ratio levels (30:1 or 40:1, for example) the Expander-Gate functions as a gate by reducing lower level signals dramatically. As you adjust the Ratio parameter, refer to the built-in graph to see how the shape of the expansion curve changes.
Attack	Allows you to set the Expander's attack time. This parameter determines how quickly a signal's level is reduced once it falls below the threshold. This setting, along with the Ratio setting, allows you to control the softness of the Expander's gain reduction curve.
Hold	Allows you to specify a duration (in seconds or milliseconds) that the Expander-Gate stays open after the initial attack cycle. This parameter can be used as a one-time function to keep the Expander-Gate open for longer periods of time with a single crossing of the threshold. It can also be used to prevent gate chatter, which might occur if varying input levels near the threshold cause the Gate to open and close very rapidly.
Decay	Allows you to control how long it takes for the Gate to close after the input signal falls below the threshold level and the hold time has passed.
Range	Sets the depth of the Gate when closed. This parameter has a maximum depth of –80 dB. Setting the Gate to higher range levels allows more of the gated audio that falls below the threshold to peek through the Gate at all times.
External Key	This parameter has no effect on the AudioSuite plug-ins.
Key Listen	This parameter has no effect on the AudioSuite plug-ins.
Key HPF	This parameter has no effect on the AudioSuite plug-ins.
Key LPF	This parameter has no effect on the AudioSuite plug-ins.
Graph	Displays the response curve set by the Expander-Gate's Threshold, Ratio, and Range settings. As you adjust these parameters, refer to the graph to see how the shape of this curve changes. It allows you to see the effect of your settings.

Gate AudioSuite Plug-In

The Gate plug-in reduces noise by decreasing the gain of signals that fall below a user-selectable threshold.

Gate Parameters

The following table lists the Gate plug-in parameters.

Parameter	Description
Reduction	Indicates the amount of reduction in dB.
Threshold	Allows you to set the threshold level. Signals that exceed this level pass through. Signals that are below it are gated, depending on the settings of the Attack, Hold, Decay, and Range parameters.
Attack	Allows you to set the attack time of the Gate.
Hold	Allows you to specify a duration (in seconds or milliseconds) that the Gate stays open after the initial attack cycle. This parameter can be used as a one-time function to keep the Gate open for longer periods of time with a single crossing of the threshold. It can also be used to prevent gate chatter, which might occur if varying input levels near the threshold cause the Gate to open and close very rapidly.
Decay	Allows you to control how long it takes for the Gate to close after the signal falls below the threshold level.
Range	Sets the depth of the Gate when closed. This parameter has a maximum depth of –80 dB. Setting the Gate to higher range levels allows more of the gated audio that falls below the threshold to peek through the gate at all times. This is useful for problems such as drum leakage, where you might want to suppress the overall drum kit sound by a specific amount while emphasizing the gated instrument such as a snare.
Graph	Displays the response curve set by the Gate's Threshold and Range settings. As you adjust these parameters, refer to the graph to see how the shape of this curve changes. It allows you to see the effect of your settings.
External Key	This parameter has no effect on the AudioSuite plug-ins.
Key Listen	This parameter has no effect on the AudioSuite plug-ins.

DeEsser AudioSuite Plug-In

The DeEsser plug-in isolates and attenuates sibilants (“ess” sounds: “s,” “sh,” and “ch”) and other high-frequency distortions. It removes these sounds by using a fast-acting compression monitored by a Threshold control that sets the frequency above which compression starts and a Frequency control that sets the frequency band in which the plug-in operates.

The DeEsser is a monophonic-only plug-in.

Using DeEsser Effectively

For best results, use the DeEsser before any other compressor or limiter plug-in.

Because too much “de-essing” can make audio clips sound lifeless, apply the plug-in to individual tracks rather than entire mixes. To improve audio quality in your project:

- Set the Frequency slider to remove sibilants (typically in the 4– to 10–kHz range) and not other parts of the signal. This prevents de-essing from changing the original character of the audio material.
- Set the Threshold control high enough to trigger de-essing by sibilants only. If you set the Threshold too low, a loud, nonsibilant section of audio material could cause unwanted gain reduction or overattenuation of sibilants.
- Automate the Threshold control so that it is lower on soft sections when the audio material has both very loud and very soft passages.

DeEsser Parameters

The following table lists the DeEsser plug-in parameters.

Parameter	Description
Input	Indicates the level of the unprocessed input signal to the DeEsser.
Output	Indicates the output level of the DeEsser.
Reduction	Indicates the amount of gain reduction in decibels. It remains at the 0-dB level when the input signal is below the threshold.
Threshold	Sets the threshold level. Signals that exceed this level will be compressed; signals that are below it will be unaffected. A setting of 0 dB is equivalent to no de-essing.

Parameter	Description
Frequency	Sets the frequency band in which the DeEsser operates. Frequencies in the specified range will be gain-reduced. To find the optimum Frequency setting, slide this control back and forth during playback.
Key Listen	Monitors the sibilant peaks used by the DeEsser as a key input to trigger compression. This is useful for listening only to the sibilants and fine-tuning settings to remove them.

EQ AudioSuite Plug-Ins

There are four EQ plug-ins:

- 1-Band EQ II
- 4-Band EQ II
- 1-Band EQ III
- 7-Band EQ III

The EQ plug-ins provide a set of high-quality options for adjusting the frequency spectrum of audio material

EQ II Parameters

The following table lists the EQ II plug-in parameters.

Parameter	Description
Input	Allows you to control the input gain of the EQ to prevent the possibility of clipping.
Phase Invert	Allows you to invert the phase (polarity) of the input signal in order to change frequency response between “multi-miked” sources (a common technique for “miking” a guitar amplifier), or to correct for miswired microphone cables.
Type	Allows you to select an EQ type (High-Pass, Low-Shelf, Peak, High-Shelf or Low-Pass).
Gain	Allows you to control the amount that the selected frequencies are cut or boosted (for Peak, High-Shelf, and Low-Shelf only).
Freq	Allows you to designate the center of the frequency region to be cut or boosted.
Q	(Peak only) Allows you to set the bandwidth of the Peak filter. Higher values represent narrower bandwidths. Lower values represent wider bandwidths.
Bypass	Bypasses the EQ. The 4-Band EQ II has individual Bypass buttons for each band (black buttons with EQ curve icons).
High-Pass	Attenuates all frequencies below the selected cutoff frequency setting at a rate of 12 dB per octave while allowing all others above the frequency to pass through. For this reason, no gain control is available for this filter. High-pass filters can be useful for removing low-frequency rumble or for thinning out the lower end of a sound for special effects, such as a “telephone simulation” effect.
Low-Shelf	Produces a lift or a cut below the specified frequency.
Peak	Boosts or cuts only those frequencies around the selected center frequency. The Q button sets the bandwidth of the Peak filter, which determines the width of the filter’s overall slope — from a broad “bell” shape to a narrow notch. Broad curves tend to be most useful for musical applications. Narrow curves are useful for special-purpose processing such as hum removal. Higher values represent narrower bandwidths. Lower values represent wider bandwidths.
High-Shelf	Produces a lift or a cut at the specified frequency and above it.

Parameter	Description
Low-Pass	Attenuates all frequencies above the selected cutoff frequency setting at a rate of 12 dB per octave while allowing all others below the frequency to pass through. For this reason, no gain control is available for this filter.

1-Band EQ III Parameters

The following table lists the 1-Band EQ III plug-in parameters.

Parameter	Description
Input	Sets the input gain of the plug-in before EQ processing, letting you make up gain or prevent clipping at the plug-in input stage.
Input Polarity control	Inverts the phase (polarity) of the input signal, to help compensate for phase anomalies occurring in multi-microphone environments, or because of mis-wired balanced connections.
Type	Allows you to select an EQ type (High-Pass, Notch, High-Shelf, Low-Shelf, Peak, or Low-Pass). The name of the type you select appears in the text field.
Filter	
Q	(Peak and Notch) Controls the width of the EQ band. Higher values represent narrower bandwidths. Lower values represent wider bandwidths. (High-Shelf and Low-Shelf) Changes the Q of the shelving filter. Higher Q values represent steeper shelving curves. Lower Q values represent broader shelving curves. (High-Pass and Low-Pass) Lets you select from any of the following Slope values: 6 dB, 12 dB, 18 dB, or 24 db per octave.
Freq	Allows you to set the center frequency (Peak, High-Shelf, Low-Shelf, and Notch) or the cutoff frequency (High-Pass and Low-Pass).
Gain	Allows you to control the amount that the selected frequencies are cut or boosted (for High-Shelf, Low-Shelf, and Peak only).
Frequency Graph Display	Shows a control dot that indicates the center frequency or cutoff frequency for the currently selected filter type, and a frequency response curve. You can adjust the parameters by dragging the control dot.

7-Band EQ III Parameters

The following table lists the 7-Band EQ III plug-in parameters.

Parameter	Description
In and Out meters	Show peak signal levels before and after EQ processing. Green indicates nominal levels. Yellow indicates pre-clipping levels, starting at –6 dB below full scale. Red indicates full scale (clipping) levels. The clip indicators to the right of each meter indicate clipping at the input of output stage of the plug-in. Click a clip indicator to clear it.
Input	Sets the input gain of the plug-in before EQ processing, letting you make up gain or prevent clipping at the plug-in input stage.
Input Polarity control 	Inverts the phase (polarity) of the input signal, to help compensate for phase anomalies occurring in multi-microphone environments, or because of mis-wired balanced connections.
Output	Sets the output gain after EQ processing, letting you make up gain or prevent clipping on the channel where the plug-in is being used.
Bands	The plug-in has separate parameter controls for each of the following 7 bands: • High-Pass/Low-Notch (HPF) • Low-Pass/High-Notch (LPF) • Low Shelf/Low Peak (LF) • Low-Mid Peak (LMF) • Mid-Peak (MF) • High-Mid Peak (HMF) • High Shelf/High Peak (HF)
Band Enable button 	Toggles the band in and out of the circuit. When a band's Enable button is highlighted, the band is in circuit. When a band's Enable button is dark gray, the band is bypassed.

Parameter	Description
Type selectors	The HPF, LPF, LF, and HF band sections have type selectors that toggle between the two available filter types for that section, as follows: • High-Pass Filter (HPF band) — Attenuates all frequencies below the Frequency setting at the selected slope while letting all frequencies above pass through. • Low-Notch EQ (HPF band) — Attenuates a narrow band of frequencies centered around the Frequency setting. The width of the attenuated band is determined by the Q setting. • Low-Pass Filter (LPF band) — Attenuates all frequencies above the Frequency setting at the selected slope while letting all frequencies below pass through. • High-Notch EQ (LPF band) — Attenuates a narrow band of frequencies centered around the Frequency setting. The width of the attenuated band is determined by the Q setting. • Low-Shelf EQ (LF band) — Boosts or cuts frequencies at and below the Frequency setting. The amount of boost or cut is determined by the Gain setting. The Q setting determines the shape of the shelving curve. • Low Peak EQ (LF band) — Boosts or cuts a band of frequencies centered around the Frequency setting. The width of the selected band is determined by the Q setting. • High-Shelf EQ (LF band) — Boosts or cuts frequencies at and above the Frequency setting. The amount of boost or cut is determined by the Gain setting. The Q setting determines the shape of the shelving curve. • High Peak EQ (LF band) — Boosts or cuts a band of frequencies centered around the Frequency setting. The width of the selected band is determined by the Q setting.
Q	(Peak and Notch bands) Controls the width of the EQ band. Higher values represent narrower bandwidths. Lower values represent wider bandwidths. (Shelf bands) Changes the Q of the shelving filter. Higher Q values represent steeper shelving curves. Lower Q values represent broader shelving curves. (High-Pass and Low-Pass bands) Lets you select from any of the following Slope values: 6 dB, 12 dB, 18 dB, or 24 db per octave.
Freq	Allows you to set the center frequency (Peak, Shelf, and Notch EQs) or the cutoff frequency (High-Pass and Low-Pass filters).
Gain	Allows you to control the amount that the selected frequencies are cut or boosted (for Shelf and Peak only).
Frequency Graph Display	Shows a color-coded control dot that corresponds to the color of the Gain control for each band, and a frequency response curve. You can adjust the parameters by dragging one or more of the control dots.

Flanger AudioSuite Plug-In

The Flanger plug-in combines a time-delayed, pitch-shifted copy of an audio signal with itself. The Flanger differs from other digital flangers in that it uses a through-zero flanging algorithm that results in a truer tape-like flange. This technique delays the source signal very slightly (approximately 256 samples), and then modulates the delayed signal back and forth in time in relation to the source signal, passing through its zero point on the way.

The Flanger plug-in is ideal for thickening and adding a swirling, moving quality to guitars and other instruments. The following table lists the Flanger plug-in parameters:

Parameter	Description
Input Level	Allows you to adjust the input volume of the flanger to prevent clipping or increase the level of the processed signal. This slider is set to a default of +3 dB. If your source audio has been recorded very close to peak level, this +3 dB default setting could cause clipping. Use this control to reduce the input level.
Sum Inputs button	When you use the Flanger plug-in in Stereo mode, a Sum Inputs button appears next to the right channel Input Level slider. Clicking the Sum Inputs button sums the source input signals (regardless of whether the input is mono or stereo) before processing them.The source signal then appears in the center of the stereo field, and the processed signal is output in stereo. When you click the Sum Inputs button, the LFO waveform on the right channel is automatically phase inverted to enhance the mono-stereo effect.
Mix	Allows you to adjust the balance between the Dry (source) signal and the Wet (processed) signal, giving you control over the depth of the effect.
High Pass Filter	Controls the cutoff frequency of the High Pass Filter, allowing you to attenuate the frequency content of the feedback signal and the frequency response of the flanging. The higher the setting, the more low frequencies are removed from the feedback signal.
LFO Rate	Allows you to adjust the rate of the low frequency oscillator (LFO) applied to the delayed signal as modulation. The higher the setting, the more rapid the modulation. Use the LFO Waveform selector to select either a sine wave or a triangle wave as a modulation source.
LFO Width	Allows you to adjust the intensity of the LFO applied to the delayed signal as modulation. The higher the setting, the more intense the modulation.
Feedback	Controls the amount of feedback applied from the output of the delayed signal back into its input. Negative settings provide a more intense effect.
LFO Waveform	Selects a sine wave or triangle wave for the LFO. This affects the character of the modulation. The sine wave has a gentler ramp and peak than the triangle wave.

Invert AudioSuite Plug-In

The Invert plug-in reverses the polarity of the selected audio. All positive sample amplitude values are made negative, and all negative amplitudes are made positive. This process is useful for permanently altering the phase (polarity) relationship of tracks. Inverting can be useful when mixing because it alters frequency response between source tracks recorded with multiple microphones and also allows you to correct for audio that was recorded out of phase.

Duplicate AudioSuite Plug-In

The Duplicate plug-in creates a new master clip from a selected audio master clip. The plug-in uses the IN and OUT points on the selected clip to define the boundaries of the new clip. This plug-in applies only if you are using the Create New Master Clips features of the AudioSuite plug-ins.

Delay AudioSuite Plug-In

The Delay plug-in provides time-delay-based effects.

Delay Parameters

The following table lists the Delay plug-in parameters.

Parameter	Description
Input	Controls the input volume of the delay to prevent clipping.
Mix	Allows you to control the balance between the delayed signal and the original signal. If you are using a delay for flanging or chorusing, you can control the depth of the effect somewhat with the Mix setting.
LPF (Low-Pass Filter)	Controls the cutoff frequency of the low-pass filter. This parameter allows you to attenuate the high-frequency content of the feedback signal. The lower the setting, the more high frequencies are attenuated.
Delay	Sets the delay time between the original signal and the delayed signal.
Depth	Controls the depth of the modulation applied to the delayed signal.
Rate	Controls the rate of modulation of the delayed signal.
Feedback	Controls the amount of feedback applied from the output of the delay back into its input. Also controls the number of repetitions of the delayed signal. Negative Feedback settings give a more intense “tunnel-like” sound to flanging effects.
Tempo	Sets the desired tempo in beats per minute. When a specific Duration is selected, moving this control will affect the Delay setting.
Meter	Use this to enter either simple or compound time signatures. The default time signature is 4/4.
Duration	Click one or more of the buttons to specify a desired delay from a musical perspective. You can click one of the note value buttons (whole note, half note, quarter note, eighth note, sixteenth note). If necessary, click the Triplet modifier or Dot modifier button to dot the selected note value or make it a triplet.
Groove	Provides fine adjustment of the delay in percentages of a 1:4 subdivision of the beat. You can use this parameter to add “swing” by slightly offsetting the delay from the precise beat of the track.

Multi-Tap Delay AudioSuite Plug-In

The Multi-Tap Delay plug-in adds up to four independently controlled delays (or “taps”) to the original audio signal. By allowing you to control the delay time and number of repetitions of each tap individually, the Multi-Tap Delay plug-in provides greater flexibility than standard single-delay devices.

The Multi-Tap Delay plug-in is ideal for adding spatialization or complex rhythmic echo effects to virtually any instrument or sound.

Multi-Tap Delay Parameters

The following table lists the Multi-Tap Delay plug-in parameters:

Parameter	Description
Gain	Controls the input level of each of the four delay lines for individual delay taps. Adjust Gain to prevent clipping or increase the level of the processed signal.
Feedback	Controls the amount of feedback applied from the output of the delay into its input. It also controls the number of repetitions of the delayed signal. For the feedback parameter to function, the Gain slider must be raised above its lowest setting.
Pan	Controls the apparent location of each tap in the stereo field.
Delay	Sets the delay time between the original signal and the delayed signal. The higher the setting, the longer the delay. This parameter is adjustable from 0 to 1500 milliseconds (1.5 seconds).
Mix	Allows you to adjust the balance between the source signal and the processed signal, giving you control over the depth of the effect.
Sum Inputs button	When you use the Multi-Tap Delay plug-in in Stereo mode, a Sum Inputs button appears next to the Mix sliders. Clicking the Sum Inputs button sums the source input signals (regardless of whether the input is mono or stereo) before processing them.The source signal then appears in the center of the stereo field, and the processed signal is output in stereo.

Normalize AudioSuite Plug-In

In cases where a sound file has been recorded with too little amplitude, the Normalize plug-in ensures that the inherent dynamics of the performance remain unchanged while the overall volume level of the passage is raised.

The controls let you specify how close to maximum level (the clipping threshold) the peak level of your selection or file is boosted. You can enter this information in the following ways:

- Enter a numeric decibel value below the clipping threshold.
- Enter a percentage of the threshold.
- Drag the slider.
- Press and hold the Ctrl key (Windows) or the ⌘ key (Macintosh), then drag the slider to fine-adjust.

Use the rms and peak buttons to switch the calibration of normalizing between RMS and Peak modes. Peak normalizes the signal at the maximum possible level without clipping. RMS normalizes the input signal at a level consistent with the root-mean-square value, or the effective average level of the selected material.

Gain AudioSuite Plug-In

Gain allows you to boost or lower amplitudes in a file or selection by a specified amount. Use Gain for smoothing out undesirable peaks and other dynamic inconsistencies.

Specify the desired gain level by doing one of the following:

- Enter a numeric decibel value.
- Enter a percentage value.
- Drag the slider.
- Press and hold the Ctrl key (Windows) or the ⌘ key (Macintosh), then drag the slider to fine-adjust.

Use the rms and peak buttons to switch the calibration of gain adjustment between RMS and Peak modes. Peak adjusts the gain of the signal to the maximum possible level without clipping. RMS adjusts the input signal to a level consistent with the root-mean-square value, or the effective average level of the selected material.

Ping-Pong Delay AudioSuite Plug-In

The Ping-Pong Delay plug-in modifies an audio signal by adding a controllable delay to the original signal. It is ideal for adding spatialization and creating a characteristic ping-pong echo effect.

Ping-Pong Delay Parameters

The following table lists the Ping-Pong Delay plug-in parameters:

Parameter	Description
Gain	Adjusts the input volume of the Ping-Pong Delay to prevent clipping or increase the level of the processed signal.
Sum Inputs button	When you use the Ping-Pong Delay plug-in in Stereo mode, a Sum Inputs button appears next to the Gain sliders. Clicking the Sum Inputs button sums the source input signals (regardless of whether the input is mono or stereo) before processing them.The source signal then appears in the center of the stereo field, and the processed signal is output in stereo.
Mix	Allows you to adjust the balance between the source signal and the processed signal, giving you control over the depth of the effect.
Delay	Sets the delay time between the original signal and the delayed signal. The higher the setting, the longer the delay. This parameter is adjustable from 0 to 1500 milliseconds (1.5 seconds).
Lowpass Filter	Controls the cutoff frequency of the Lowpass Filter, allowing you to attenuate the high frequency content of the feedback signal. The lower the setting, the more high frequencies are removed from the feedback signal. The range of the Lowpass Filter is 20 Hz to 19.86 kHz, with a maximum value of Off (which effectively means bypass).
Feedback	Controls the amount of feedback applied from the output of the delay into its input. It also controls the number of repetitions of the delayed signal.
Cross-Feedback	Feeds the delayed signals to their opposite channels. The result is a stereo echo that ping-pongs back and forth between the right and left channels.

Reverse AudioSuite Plug-In

Reversed sounds are useful effects in many music and film and video projects. The Reverse plug-in lets you perform this type of processing very easily.

DC Offset Removal AudioSuite Plug-In

The DC Offset Removal plug-in removes DC offset from your audio files. The term “DC offset” describes a specific type of audio artifact that might appear in digital audio signals.

DC Offset can be identified in a waveform overview because it appears to have a near-vertical fade-in with a constant or “steady-state” offset from zero when the file is actually “silent” (it contains no audible audio). The DC Offset plug-in can help remove (or at least reduce) the DC offset from your source audio files.

Signal Generator AudioSuite Plug-In

The Signal Generator plug-in produces audio test tones in a variety of frequencies, waveforms, and amplitudes. The plug-in has the following options:

- **Frequency:** This option sets the frequency of the signal in hertz. Values range from a low of 20 Hz to a high of 20 kHz.
- **Level:** This option sets the amplitude of the signal in decibels. Values range from a low of –95 dB to a high of 0.0 dB.
- **Signal:** These buttons allow you to select the waveform. The waveform choices are sine, square, sawtooth, triangle, white noise, and pink noise.

Use the rms and peak buttons to switch the calibration of the generated signal between RMS and Peak modes. Peak generates the signal at the maximum possible level without clipping. RMS generates the signal at levels consistent with the root-mean-square value, or the effective average level of the signal.

The Signal Generator produces a tone as soon as it is inserted on a track. To mute the tone, click the Bypass button.

Time Compression Expansion AudioSuite Plug-In

The Time Compression Expansion plug-in allows you to adjust the duration of any selected regions by increasing or decreasing the selection’s length without changing pitch. This function is particularly important in audio postproduction applications because it allows you to adjust sounds to specific time lengths or timecode durations for synchronization.

To change duration (length) and pitch simultaneously, use the Pitch Shift plug-in.

Master Clip Mode Parallel Processing

The Time Compression Expansion plug-in allows two tracks to be time-compressed or expanded as a "stereo pair," so that the two sides of the stereo signal are processed relative to each other.

The Time Compression Expansion plug-in has special parameters that let you enter time compression or expansion values in different formats. They are located in the Source and Destination columns, and also include the Ratio slider. Additional controls for fine-tuning the compression and expansion process are also included.

To use the special control features:

- Press and hold the Ctrl key (Windows) or the ⌘ key (Macintosh) to engage slider fine-tune mode.
- Alt+click (Windows) or the ⌘ key (Macintosh) a field or slider to reset its default value.

Time Compression Expansion Parameters

The following table lists the Time Compression Expansion plug-in parameters.

Parameter	Description
Source and Destination	The Source text boxes display the length of the current selection before processing in each of the listed formats. All the text boxes in both columns are constantly active, and a change made to one value is immediately reflected in the values displayed in the other text boxes. The text boxes in the Destination column display and control the length of the selection after processing using the current settings. You can enter the length of the Destination file by double-clicking the appropriate text box in the Destination column. Type the number of samples in min:secs:msec format or type timecode values as start and end locations. All the Destination text boxes are constantly updated, and a change made to one value is immediately reflected in the values displayed in the other text boxes. You can also enter a new tempo, bars:beats:ticks length, or time signature for regions that have tempo or Bars & Beats settings. This can be any region associated with a MIDI Metronome value (such as an overdub recorded to a MIDI click) or regions that have been processed with the Pro Tools Identify Beat command. The Ratio slider lets you set the destination length in relation to the source length. Dragging the slider to the right increases the length of the destination file, and dragging the slider to the left decreases its length. The controls below the bar line allow you to fine-tune the time compression and expansion process. They include the Crossfade, Min Pitch, and Accuracy sliders.

Parameter	Description
Crossfade	The Crossfade slider allows you to manually adjust the crossfade length in milliseconds to optimize performance of the Time Compression Expansion plug-in according to the type of audio material you are processing. The Time Compression Expansion plug-in achieves length modification by replicating or subtracting very small portions of audio material and very quickly crossfading between these alterations in the waveform of the audio material. Crossfade length essentially affects the amount of smoothing performed on audio material to prevent audio artifacts such as clicks. In general, small narrow-range time (length) changes require longer crossfades while larger changes in length require shorter crossfades. The disadvantage of long crossfade times is that they smooth the signal, including any transients. While this can be desirable for audio material such as vocals, it is not appropriate for material with sharp transients such as drums or percussion. The default setting for this parameter is Auto (leftmost position), in which crossfade times are set automatically according to the percentage of change in length for the current process. This setting should be sufficient for most applications; however, you can use this slider to manually adjust and optimize crossfade times, if necessary. For audio material with sharper attack transients, use shorter crossfade times. For audio material with softer attack transients, use longer crossfade times with a range in values of 1 to 200 ms.
Min Pitch	The Min Pitch slider lets you select the minimum (lowest) pitch that is used in the plug-in's calculations during the time compression and expansion process. The slider has a range of 40 Hz to 1000 Hz. By controlling the minimum pitch, you can focus the time compression and expansion process for maximum efficiency — it all depends on the audio's spectral shape. This slider should be set lower when you process bass guitar or another instrument with a similarly low range. Set the min pitch higher when processing instruments such as snare drums, violins, and other higher range instruments and sounds. Experiment with combinations of the other fine-tune controls in relation to the Min Pitch slider.
Accuracy	Use the Accuracy slider to prioritize the processing resources allocated to audio quality (sound) or timing (rhythm). Dragging the slider toward sound generally results in better sonic quality and fewer audio artifacts. Dragging the slider toward rhythm puts the emphasis on keeping the tempo consistent. When working with loops, listen carefully and adjust accuracy until you find the setting that keeps timing solid within the region. Start and end times are precise, but the perception of beats might be "shuffled" if the Accuracy slider's rhythm setting is too low. **The smallest time ratio allowed for time compression and expansion is 0.25. The largest time ratio allowed is 4.0.** *Normalizing a selection before applying the Time Compression Expansion plug-in can sometimes produce better-sounding results.*

Pitch Shift AudioSuite Plug-In

The Pitch Shift plug-in allows you to adjust the pitch of any source audio file with or without a change in its duration. This powerful function allows sounds to be transposed a maximum of a full octave up or down in pitch with or without altering playback speed.

Edit the Pitch Shift parameters by double-clicking and typing in any Destination text box or by dragging a slider to adjust. All Pitch Shift plug-in controls are linked, so that changing one changes the others.

Pitch Shift Parameters

The following table lists the Pitch Shift plug-in parameters.

Parameter	Description
Gain	The Gain controls set the input level, in tenths of a decibel. The input level should be set so that the plug-in can adequately handle amplitude peaks in the selection. Dragging the slider to the right increases gain, and dragging the slider to the left decreases gain.
Coarse and Fine	Adjust the pitch by dragging either of the two faders, or by typing values in the Coarse and Fine text boxes. The Coarse slider transposes in semitones (half steps); the Fine slider transposes in cents (hundredths of a semitone).
Ratio	The Ratio slider lets you set the amount of transposition (pitch change). Dragging the slider to the right raises the pitch of the processed file, and dragging the slider to the left decreases its pitch. Press and hold the Ctrl key (Windows) or the ⌘ key (Macintosh) when you drag the slider to fine-adjust.
Crossfade, Min Pitch, Accuracy	For information on these parameters, see the parameters table in “Time Compression Expansion AudioSuite Plug-In” on page 495.
Time Correction	Clicking the Time Correction check box allows you to enable or disable time correction. ⚠ **You can deselect the Time Correction check box if you are using the Create New Master Clips feature of the AudioSuite plug-ins. The Time Correction check box must be selected, however, when you are applying AudioSuite plug-ins to audio clips in the Timeline.** If the Time Correction check box is deselected, it has the effect of “permanently varispeeding” your audio file. Like working with tape, the file’s duration is compressed or extended according to the settings of the Coarse and Fine controls. Playback speed increases proportionally as the sound file is transposed up in pitch and decreases proportionally as it is transposed down in pitch, just like a tape recorder that is varispeeding. Consider that altering a file in this way has little detrimental effect on the fidelity of audio files, whereas time correction can affect fidelity in a pronounced way.

Parameter	Description
Reference Pitch	The Reference Pitch feature generates a sine wave tone that you can adjust to match a selected portion of audio material, and then use as an audible reference when pitch-shifting other audio material in your session. **To use the Reference Pitch feature:** 1. Select the audio material you want to use as a pitch reference. Click the Preview button to begin playback of the selected audio. 2. Click the Reference Pitch button to activate the reference sine wave tone. 3. Adjust the Note and Detune settings to match the reference tone to the pitch of the audio playback. Adjust the Level setting to change the relative volume of the reference tone. It might also be helpful to switch the Reference Pitch on and off to compare pitch. 4. Select the audio material to be pitch shifted. Adjust the Coarse and Fine controls to match the pitch of the audio playback to the reference pitch.

Time Shift AudioSuite Plug-In

The Time Shift plug-in provides high quality time compression and expansion algorithms and formant-correct pitch-shifting. Time Shift is ideal for music production, sound design, and post-production applications. You can use it to manipulate audio loops for tempo matching or to transpose vocal tracks using formant-correct pitch-shifting, or you can use it in audio postproduction for pullup and pulldown conversions as well as for adjusting audio to specific time or SMPTE durations for synchronization purposes.

The Time Shift plug-in has special parameters that let you enter time compression or expansion values in different formats and edit the pitch shift parameters displayed in the plug-in window. Time Shift plug-in controls are organized in four parts: Audio, Time, Formant/Transient, and Pitch.

Time Shift Parameters

The following table lists the Time Shift plug-in parameters.

Parameter	Description
Audio	You use the Audio parameter controls to select the most appropriate time compression and expansion mode for the type of material you want to process, and to attenuate the gain of the processed audio to avoid clipping. Audio parameter controls allow you to select the following Mode settings to determine the correct time compression and pitch shift algorithms: • Monophonic — for processing monophonic sounds (such as a vocal melody) • Polyphonic — for processing complex sounds (such as a multipart musical selection) • Rhythmic — for processing percussive sounds (such as a mix or drum loop) • Varispeed — for linking time and pitch change for tape-like pitch and speed change effects, and postproduction workflows You can also select the following frequency Range settings: • Low — for low-range material, such as a bass guitar • Mid — for mid-range material, such as male vocals • High — for material with a high fundamental frequency, such as female vocals • Wide — for more complex material that covers a broad frequency spectrum *In Polyphonic mode, Wide is the default Range setting and is usually best for all material. In Monophonic mode, Mid is the default Range setting and usually matches the range of most monophonic material. Range settings are not available when you select either Rhythmic mode or Varispeed mode.* The Audio Gain control attenuates the input level to avoid clipping. Adjust the Gain control from 0.0 dB to –6.0 dB to avoid clipping in the processed signal. The Clip indicator is active when clipping occurs in the processed signal. If the processed signal clips, remove the AudioSuite plug-in effect, attenuate the input gain using the Gain control, and then reapply the plug-in. The Level indicator displays the level of the output signal, which uses the full range of plasma-level meter colors.

Parameter	Description
Time	You use the Time parameter controls to specify the amount of time compression or expansion you want to apply. The Original column displays the Start and End times, and Length of the edit selection. Times are displayed in units of the timebase selected in the Units menu. The Processed column displays the target End time and Length of the processed signal. Times are displayed in units of the timebase selected in the Units menu. You can click the Processed End and Length text boxes to type the desired values. These values update automatically when you are adjusting the Time control. The Tempo row displays the Original Tempo and Processed Tempo in beats per minute (bpm). You can click the Original Tempo and Processed Tempo text boxes to type the desired values. The Processed Tempo value updates automatically when adjusting the Time control. You use the Units menu to select the desired timebase for the Original and Processed time fields: • Bars|Beats • Min:Sec • Time Code • Feet+Frames • Samples The Shift text box displays the target time compression or expansion as a percentage of the original. You can adjust the Time control, or click the Shift text box and type the desired value. Time can be shifted from 25.00% to 400.00% of the original speed (or 4 to 1/4 times the original duration). The default setting is 100.00%, or no time shift. Selecting 25.00% results in 4 times the original duration and 400.00% results in 1/4 of the original duration. *The Shift field displays up to 2 decimal places, but you can type in as many decimal places as you require (up to the IEEE standard). While the display rounds to 2 decimal places, the actual time shift is applied based on the number typed in the Shift text box. This is useful for postproduction pullup and pulldown factors.*

Parameter	Description
Formant/Transient	You use the Formant or Transient parameter controls to adjust either the amount of formant shift or the transient detection parameters, depending upon which mode you have selected in the Audio section. *The Formant parameter is available only when you select Monophonic as the Audio mode. The Transient section is available with slightly different controls, depending on whether you select Polyphonic or Rhythmic as the Audio mode.* The Formant section provides a single control for transposing the formants of the selected audio by –24.00 semitones (–2 octaves) to +24.00 semitones (+2 octaves). You can specify a Formant value by adjusting the Formant Shift control or typing a value in the Shift text box. Transient material tends to change its content quickly in time, as opposed to parts of the sound which are more sustained. You can use the controls in the Transient section to adjust the following: • Threshold — the transient detection threshold in the processed audio when you are time-stretching; you can set the threshold from 0.0 dB to –40.0 dB (the default is –6.0 dB) • Window — the analysis window length for processing audio (Polyphonic mode only); you can set the window length from 6.0 milliseconds (ms) to 185.0 ms (the default is 18.0 ms) by adjusting the Window control or typing in the Window text box • Decay Rate — the amount of decay, or audio fade, from a transient that is heard in the processed audio when you are time-stretching (Rhythmic mode only) The Follow button enables an envelope follower that simulates the original acoustics of the audio being stretched (Polyphonic mode only). Click the Follow button to enable or disable envelope following.
Pitch	You use the Pitch parameter controls to shift the pitch of the audio. You can pitch shift audio by using the Transpose and Shift text boxes: • Transpose — displays the transposition amount in semitones; you can transpose pitch from –24.00 semitones (–2 octaves) to +24.00 semitones (+2 octaves) • Shift — displays the pitch shift amount as a percentage; you can pitch shift from 25.00% (–2 octaves) to +400.00% (+2 octaves) *In Monophonic mode, pitch shift can also be formant-correct.*

Non-Core AudioSuite Plug-Ins

Non-core AudioSuite plug-ins are also supported, but are not installed with your Avid editing application. They are located in the Goodies folder. These plug-ins can be used on a trial basis and then purchased through Digidesign. All others are not supported at this time.

The supplied non-core AudioSuite plug-ins are briefly described in this topic. The plug-ins have their own detailed documentation. For more information, see the following Web site: www.digidesign.com.

Digidesign Intelligent Noise Reduction (DINR) — Broadband Noise Reduction (BNR)

The BNR feature of the Digidesign Intelligent Noise Reduction™ (DINR™) plug-in provides broadband and narrow-band noise reduction for suppressing unwanted elements such as tape hiss, air-conditioning rumble, and microphone preamplifier noise.

Focusrite d3

Focusrite® d3 is a high-quality, dynamic processor plug-in that contains a compressor and a limiter. The d3 compressor reduces the dynamic range of audio signals that exceed a user-selectable threshold by a specific amount. The d3 does this by reducing output levels when input levels increase above the threshold.

The d3 limiter operates as a fast-attack compressor with a high compression ratio. Like the compressor, the limiter is activated when the signal exceeds a user-selectable threshold. The limiter then compresses any signal above the selected threshold to the lower threshold limit that you have set.

There are two versions of the plug-in:

- *ff d3 Mono*, which operates on channels (tracks) separately.
- *ff d3 Stereo*, which operates on a composite of the two channels of the stereo signal. It prevents image shift when signal levels differ between the two channels.

Maxim

The Maxim™ plug-in performs peak limiting and sound maximizing. Maxim takes advantage of the random-access nature of disk-based recording to anticipate peaks in audio material and preserve their transient attacks when performing reduction. It helps to preserve the character of the original audio signal without clipping peaks or introducing distortion.

Digidesign D-Fi

The set of D-Fi™ plug-ins provides analog synthesizer effects:

- *Lo-Fi*™ adds noise generation, bit-rate reduction, distortion, and saturation to sound.
- *Sci-Fi*™ adds analog synthesizer-type ring modulation, frequency modulation, and variable frequency resonator.
- *Recti-Fi*™ generates new harmonics and subharmonics through waveform rectification.
- *Vari-Fi*™ adds tape and turntable “start up” and “slow down” effects.

Chapter 15

Exporting Frames, Clips, or Sequences: Advanced

You can export files for use with another system, another application, or another platform. Your Avid video-based editing system provides tools for exporting clips and sequences in various formats. The following topics provide advanced information on exporting:

- Exporting Using Send To Templates
- Exporting OMFI and AAF Files
- Exporting Projects and Bins Using AFE Files (Windows Only)
- Exporting Video in DV Stream Format
- Exporting QuickTime Movies
- Exporting As an AVI File (Windows Only)
- Installing or Copying the Avid Codecs for QuickTime on Other Systems
- Exporting from a Third-Party QuickTime or AVI Application
- Exporting as Windows Media (Windows Only)
- Exporting Tracks As Audio Files
- Exporting As a Graphic File
- Exporting Media to XDCAM Devices

For basic information about exporting, see “Exporting Frames, Clips, or Sequences: Basics” in the Help or the Basics Guide for your Avid editing application.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting Using Send To Templates

The Send To feature is the quickest and simplest way to perform most common export tasks. Send To enables you to send sequences or master clips from your Avid editing system to other applications, automating your workflow.

The Send To option provides you with a choice of several pre-defined templates to streamline your workflow. These templates are set to default parameters, customized for the specific workflow. In many instances you can choose to automatically launch the application to which you are sending your clip or sequence.

Avid recommends you use the pre-defined template default settings, which have been qualified by Avid.

To use the predefined templates:

1. Select a sequence in a bin.
2. Select File > Send To.
3. Select the desired Send To template option.
4. Click Set and choose a destination folder for the exported files.
5. Click OK.

   The file is exported to the selected destination.

For more details about individual Send To options, see the following topics:

- Send To DigiDelivery
- Send To Digidesign Pro Tools
- Send to DVD Authoring
- Send to DVD One Step
- Send to Sorenson Squeeze
- Send To Avid DS
- Send To Third-Party Applications

An Avid Studio products Send To submenu might appear in your editing application, but is applicable only when running an Avid Studio package.

Send To DigiDelivery

You can export a sequence directly to DigiDelivery®, the file-exchange service from Avid Digidesign®. You must have a DigiDelivery account to deliver your exported sequence. For information about obtaining an account, go to the Avid DigiDesign web site, www.digidesign.com, and select Products > DigiDelivery.

To export directly to DigiDelivery:

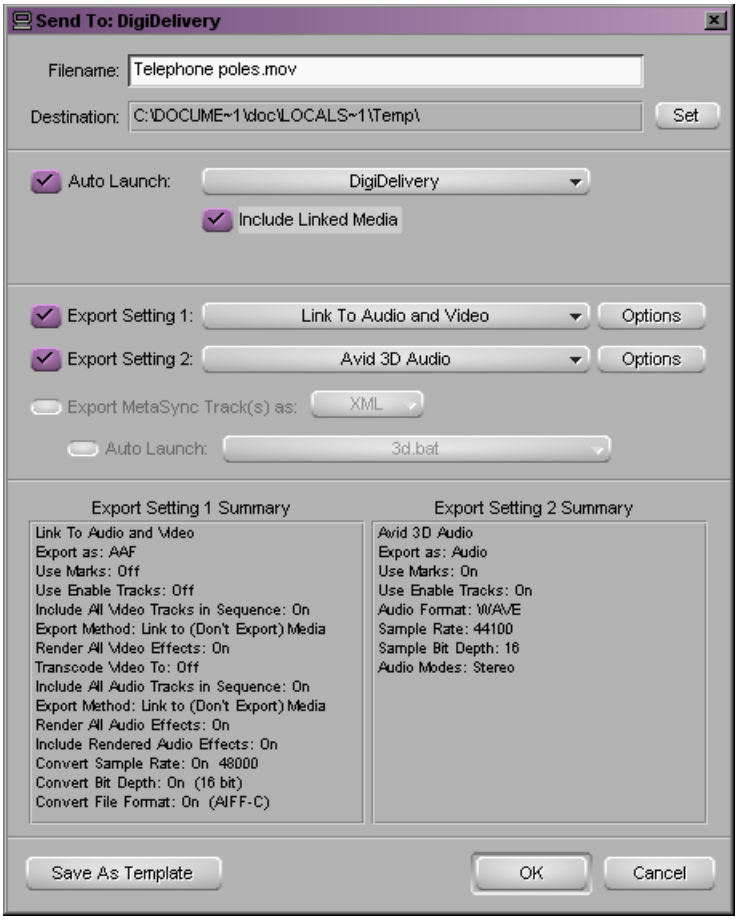
1. Prepare the sequence, as described in "Preparing to Export a Sequence" in the Help.
2. Select a sequence in a bin.
3. Do one of the following:
   - Select File > Send To > DigiDelivery.
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the clip or sequence in the bin, and select Send To > DigiDelivery.

   The DigiDelivery template options appear.
4. Select one of the options in the following table.

Send To DigiDelivery Options

Option	Description
Avid Video - Embed Audio	Select this option to send to a Digidesign Pro Tools® system that supports playing back Avid video. The Pro Tools system has either an Avid Mojo or a Digi V10 for video playback. A video mixdown of the tracks is created at DV 25; the audio is consolidated and embedded into the AAF file.
QuickTime - Embed Audio	Select this option to send to a Digidesign Pro Tools system that supports QuickTime video only. The system does not have an Avid Mojo or a Digi V10. A QuickTime movie of video is created; the audio is consolidated and embedded into the AAF file.

The Send To dialog box opens with the template you selected.



The Filename text box displays the name of the sequence or clip you chose, and Auto Launch is selected by default to launch DigiDelivery automatically after you click OK. If the option you chose involves linking to media, Include Linked Media is also selected by default.

5. (Option) Change the file name.
6. Click Set to browse to the drive and folder to which you want to export the sequence locally before you upload it to DigiDelivery.

Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

7. Review the Export Setting Summary.

8. (Option) If you need to make any changes, select the Options button, make any necessary changes, and click Save.
9. (Option) Do the following if your sequence includes MetaSync tracks:
   a. Select Export MetaSync tracks, and then select XML or AAF. If you select XML, the system performs an AAF export, and then automatically opens MetaSync Publisher, which produces the XML file.

      For more information on MetaSync Publisher, see "Using MetaSync Publisher" in the Help.

   b. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.
10. (Option) If you make any changes to the Send To dialog box, do the following if you want to save these changes as a new template.
    a. Click the Save As Template button.
    b. Rename the file. Make sure you leave the .stt extension.
    c. Click Save.

       The new template is saved. The next time you select a sequence, and choose File > Send To, the new template appears in the list.
11. Click OK.

    The sequence is exported, a QuickTime movie or video mixdown is created, and the audio is embedded into the AAF file.

    DigiDelivery opens. The name in the Delivery Name text box is the same name as that of your sequence.

Send To Digidesign Pro Tools

When you want to export a sequence to Digidesign Pro Tools®, you can send it to movable storage and then take the storage to a Pro Tools system, or you can export it directly to Digidesign® over an Avid Unity™ system. Sending it to movable storage lets you assemble all the media in one location for moving to a Pro Tools system. For each export method, you can select a template that meets your needs.

You can also transfer files to Pro Tools through Interplay. For more information, see "Using Pro Tools and Interplay" in *Avid Interplay Best Practices*.

To export to Digidesign Pro Tools:

1. Prepare the sequence, as described in "Preparing to Export a Sequence" in the Help.
2. Select a sequence in a bin.
3. Do one of the following:
   - Select File > Send To > Digidesign Pro Tools, for sequences that you want to transfer on movable media.
   - Select File > Send To > Digidesign Pro Tools on Avid Unity, for sequences that are located on the same Avid Unity environment.
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the clip or sequence in the bin, and select Send To > Digidesign Pro Tools or Digidesign Pro Tools on Avid Unity.

   The Send to Digidesign Pro Tools template options appear.
4. Select one of the options in the following tables:

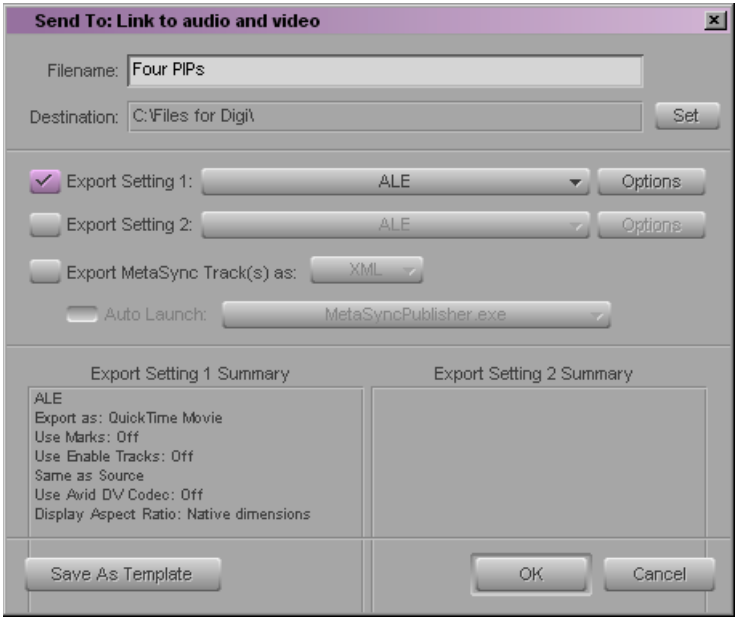
Send To Digidesign Pro Tools Options

Option	Description
Avid Video - Embed Audio	Select this option to send to a Digidesign Pro Tools system that supports playing back Avid video. The Pro Tools system has either an Avid Mojo® or a Digi V10 for video playback. A video mixdown of the tracks is created at DV 25; the audio is consolidated and embedded into the AAF file.
QuickTime - Embed Audio	Select this option to send to a Digidesign Pro Tools system that supports QuickTime video only. The system does not have an Avid Mojo or a Digi V10. A QuickTime movie of video is created; the audio is consolidated and embedded into the AAF file.

Send To Digidesign Pro Tools on Avid Unity Options

Option	Description
Link to Video and Audio	Select this option to export AAF metadata only (no media is exported). The Pro Tools links to, or references, the Avid video and audio files located on the Avid Unity. The Pro Tools user can copy media during the AAF import into Pro Tools. This is the fastest export from Avid.
Video Mixdown - Link to Audio	Select this option to create a flattened video mixdown of the tracks. The AAF links to the Avid audio media files located on the Avid Unity. The Pro Tools user can copy media during the AAF import into Pro Tools.
QuickTime - Link to Audio	Select this option to send to a Digidesign Pro Tools system that supports QuickTime video only. The AAF links to the Avid audio media files located on the Avid Unity. The Pro Tools user can copy media during the AAF import into Pro Tools.

The Send To dialog box opens with the template you chose.



The Filename text box displays the name of the sequence or clip you chose.

5. (Option) Change the file name.
6. Click Set to browse to the drive and folder to which you want to export the sequence.

Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

7. Review the Export Setting Summary.

   For more information about Export options, see "Export Settings" on page 657.

8. (Option) If you need to make any changes, select the Options button, make any necessary changes, and click Save.

9. (Option)

10. Do the following if your sequence includes MetaSync tracks:

    a. Select Export MetaSync tracks, and then select XML or AAF. If you select XML, the system performs an AAF export, and then automatically opens MetaSync Publisher, which produces the XML file.

       For more information on MetaSync Publisher, see "Using MetaSync Publisher" in the Help.

    b. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.

11. (Option) If you make any changes to the Send To dialog box, do the following if you want to save these changes as a new template.

    a. Click the Save As Template button.

    b. Rename the file. Make sure you leave the .stt extension.

    c. Click Save.

       The new template is saved. The next time you select a sequence, and choose File > Send To, the new template appears in the list.

12. Click OK.

    The file is exported to the selected destination.

Send to DVD Authoring

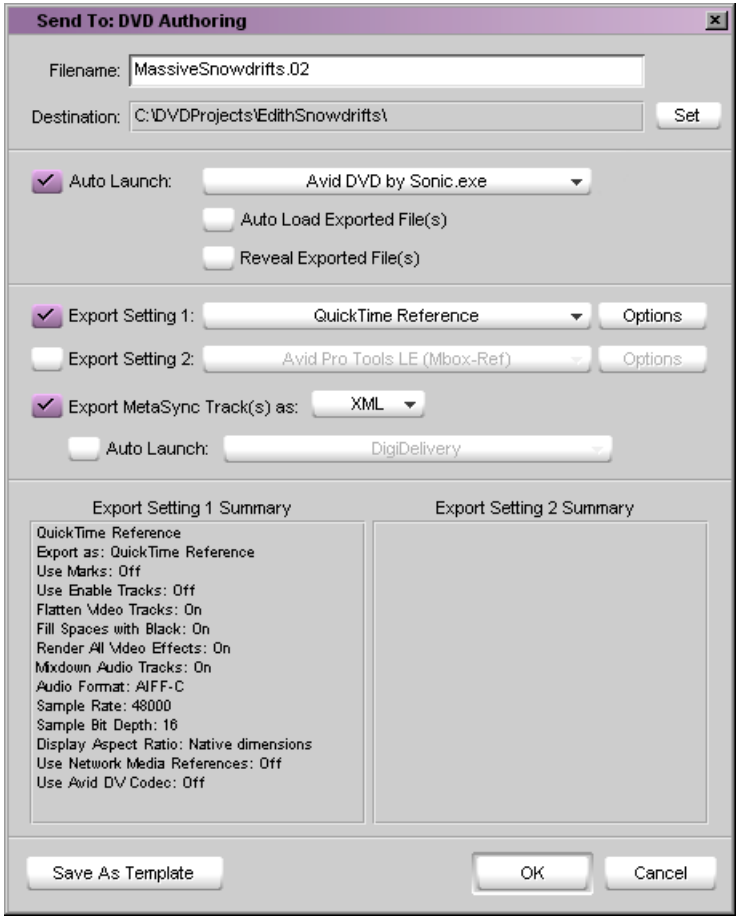
You can export your sequence directly to Avid DVD by Sonic and then perform authoring functions in the Avid DVD by Sonic application. If your sequence includes MetaSync tracks, the MetaSync tracks are exported by default as XML into Avid DVD by Sonic.

To export directly to DVD:

1. Prepare the sequence, as described in "Preparing to Export a Sequence" in the Help.
2. Select a clip or a sequence in a bin.

3. Do one of the following:
   - Select File > Send To > DVD > DVD Authoring.
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the clip or sequence in the bin, and select Send To > DVD > DVD Authoring.

   The Send To DVD Authoring dialog box opens with a default export template.



   The Filename text box displays the name of the sequence or clip you chose.

4. (Option) Change the file name.
5. Click Set to browse to the drive and folder to which you want to export the sequence.

Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

6. Review the Export Setting Summary.
7. (Option) If you need to make any changes, select the Options button, make any necessary changes, and then click Save.
8. (Option) If you make any changes to the Send To dialog box, do the following if you want to save these changes as a new template.
   a. Click the Save As Template button.
   b. Rename the file. Make sure you leave the .stt extension.
   c. Click Save.

      The new template is saved. The next time you select a sequence, and select File > Send To, the new template appears in the list.
9. Click OK.

   The sequence and optional MetaSync files are exported to the selected destination. Avid DVD by Sonic opens with your sequence loaded in its Timeline. You can use the Avid DVD by Sonic features to author menus, graphics, and other navigation devices before you burn your DVD. For more information, see the Avid DVD by Sonic documentation.

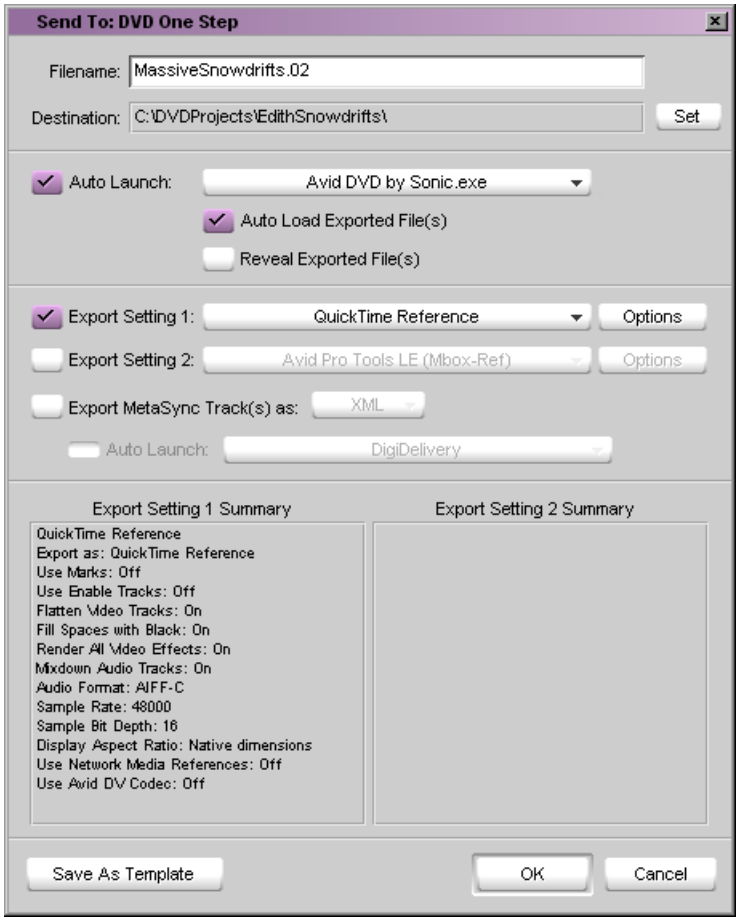
Send to DVD One Step

You can choose to export directly to Avid DVD by Sonic and burn your DVD in one step. This eliminates the necessity for further authoring work and lets you create a DVD that plays without the encumbrance of graphics, menus, or other navigation devices.

To export directly to DVD:

1. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
2. Select a clip or a sequence in a bin.
3. Do one of the following:
   - Select File > Send To > DVD > DVD One Step.
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the clip or sequence in the bin, and select Send To > DVD > DVD One Step.

The Send To DVD One Step dialog box opens with a default export template.



The Filename text box displays the name of the sequence or clip you chose.

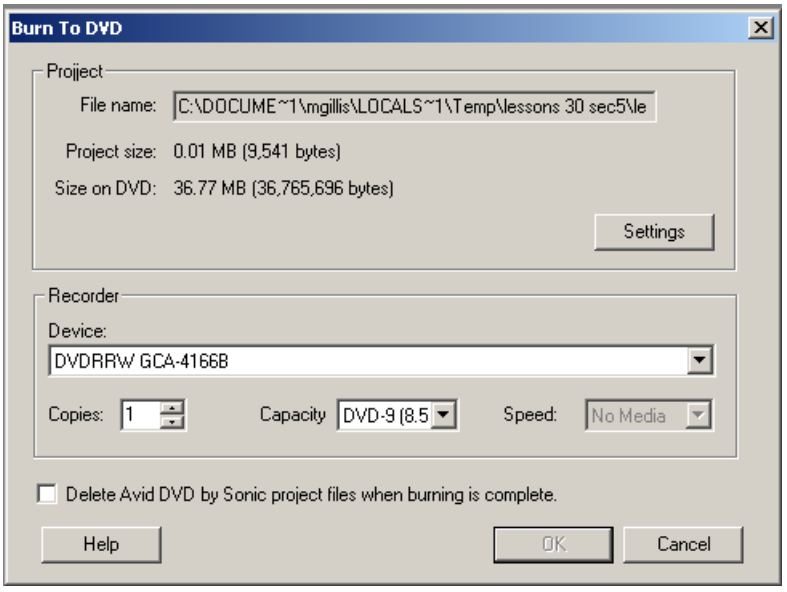
4. (Option) Change the file name.
5. Click Set to browse to the drive and folder to which you want to export the sequence.

Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

6. Accept the default settings for the rest of the options.
7. Insert a blank DVD in your DVD drive.

8. Click OK.

   The Burn to DVD dialog box opens.



9. Select the capacity of your DVD medium from the Capacity menu.

The capacity of your DVD medium must match the size you select from the Capacity menu.

10. For information about the other options, see the Sonic printed or pdf documentation.
11. Click OK.

    Your DVD is burned.

Send to Sorenson Squeeze

When you send directly to Sorenson Squeeze, a QuickTime Reference template is selected.

1. Make sure the Sorenson Squeeze application is installed on your system.
2. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
3. Select a sequence in a bin.
4. Do one of the following;
   - Select File > Send To > Encoding > Sorenson Squeeze.
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the clip or sequence in the bin, and select Send To > Encoding > Sorenson Squeeze.

   The Send To dialog box opens with a default template.

   The Filename text box displays the name of the sequence or clip you chose.
5. (Option) Change the file name.
6. Click the Options button to select Sorenson Squeeze settings. For more information, see the Sorenson Squeeze documentation.
7. Click Set to browse to the drive and folder to which you want to export the sequence.

Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

8. Review the Export Setting Summary.
9. (Option) If you need to make any changes, select the Options button, make any necessary changes, and then click Save.
10. (Option) Do the following if your sequence includes MetaSync tracks:
    a. Select Export MetaSync tracks, and then select XML or AAF. If you select XML, the system performs an AAF export, and then automatically opens MetaSync Publisher, which produces the XML file.

       For more information on MetaSync Publisher, see “Using MetaSync Publisher” in the Help.

    b. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.

11. (Option) If you make any changes to the Send To dialog box, do the following if you want to save these changes as a new template.
    a. Click the Save As Template button.
    b. Rename the file. Make sure you leave the .stt extension.
    c. Click Save.

    The new template is saved. The next time you select a sequence, and choose File > Send To, the new template appears in the list.
12. Click OK.

    The QuickTime references movie and optional MetaSync files are exported to the selected destination.

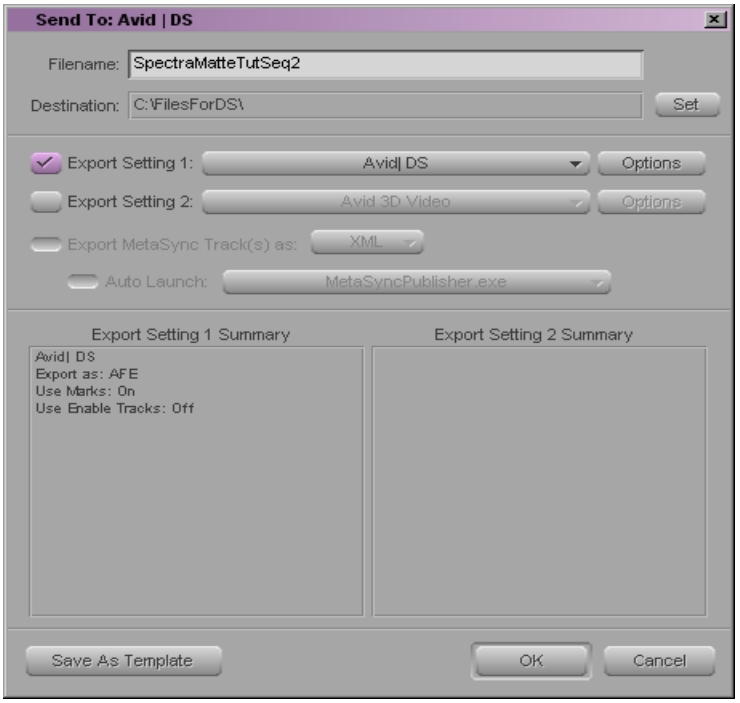
Send To Avid DS

When you choose to send to Avid DS, the sequence is exported as an AFE file (Windows) or an AAF file (Macintosh).

To export directly to Avid DS:

1. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
2. Select a clip or a sequence in a bin.
3. Do one of the following:
   - Select File > Send To > Avid DS.
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the clip or sequence in the bin, and select Send To > Avid DS.

The Send To dialog box opens with a default export template.



The filename displays the name of the sequence or clip you chose.

4. (Option) Change the file name.
5. Click Set to browse to the drive and folder to which you want to export the sequence, and then click OK.

Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

6. (Option) If you need to make any changes, select the Options button, make any necessary changes, and then click Save.

7. (Option) Do the following if you want the Avid DS application to automatically launch after you export.
   a. (Option) Click the Auto Launch button, and select Add Item.
   b. (Option) Browse to find the Avid DS application.
   c. Click OK Open.
   d. Select Auto Load Exported File(s) if you want the files you export to automatically load in the Avid DS application.
   e. Select Reveal file if you want the system to search available drives, open Windows Explorer or the folder (Macintosh), and highlight related media files.
8. (Option) Do the following if your sequence includes MetaSync tracks:
   a. Select Export MetaSync Tracks and then select XML or AAF. If you select XML, the system performs an AAF export, and then automatically opens MetaSync Publisher which produces the XML file.

      For more information on MetaSync Publisher, see "Using MetaSync Publisher" in the Help.
   b. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.
9. (Option) If you make any changes to the Send To dialog box, do the following if you want to save these changes as a new template.
   a. Click the Save As Template button.
   b. Rename the file. Make sure you leave the .stt extension.
   c. Click Save.

      The new template is saved. The next time you select a sequence, and choose File > Send To, the new template appears in the list.
10. Click OK to save the AFE file.

    The file is exported to the selected destination.

If you are editing and finishing an offline sequence that will be finished on Avid DS, make sure to consult the Avid DS Nitris Conform Guide*. This guide contains important information about the most efficient way of preparing a sequence for the conform process. You can download this guide from the Avid Knowledge Base (www.avid.com/onlinesuppport) or the Avid DS Support Center (www.softimage.com/avidds).*

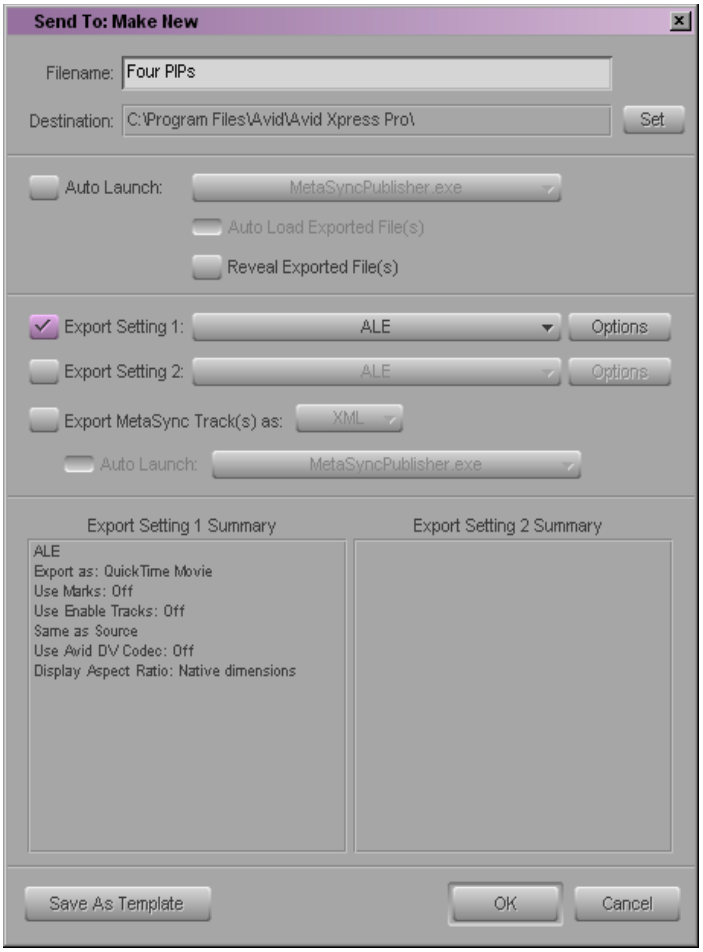
Send To Third-Party Applications

Avid provides a Make New option that allows you to customize your own Send To template for third-party applications.

To create your own template:

1. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
2. Select a clip or a sequence in a bin.
3. Do one of the following:
   - Select File > Send To > Make New.
   - Right-click (Windows) or Ctrl+Shift+click (Macintosh) the clip or sequence in the bin, and select Send To > Make New.

The Send To dialog box opens with a default export template.



4. (Option) Change the file name.
5. Select the destination folder for the file, and then click OK.

Whenever you return to a Send To dialog box, the destination folder that was last set appears in the destination field.

6. Review the Export Setting Summary.
7. (Option) If you need to make any changes, select the Options button, make any necessary changes, and then click Save.

8. (Option) Do the following if you want the third-party application to automatically launch after you export.
   a. (Option) Click the Auto Launch button, and select Add Item.
   b. (Option) Browse to find the third-party application.
   c. Click OK Open.
   d. Select Auto Load Exported File(s) if you want the files you export to automatically load in the third-party application.
   e. Select Reveal file if you want the system to search available drives, open Windows Explorer or the folder (Macintosh), and highlight related media files.
9. (Option) Do the following if your sequence includes MetaSync tracks:
   a. Select Export MetaSync Tracks and then select XML or AAF. If you select XML, the system performs an AAF export, and then automatically opens MetaSync Publisher which produces the XML file.

      For more information on MetaSync Publisher, see "Using MetaSync Publisher" in the Help.
   b. (Option) If you want to automatically load the XML files in another application, choose Auto Launch, and select the application.
10. Click OK.

    The Save As dialog opens.
11. Name the new Send To (.stt) template.
12. Click Save.

    You can use this new template when working with the third-party application.

Exporting OMFI and AAF Files

OMFI and AAF are industry-standard file formats that let you exchange compositions and media between applications.

Exporting Through OMF Interchange

OMF Interchange® (OMFI) is a platform-independent file format that stores both the digital media (video, audio, graphics, animation) and the information describing how the media is edited together to form a final sequence. This editing information, called a composition, is the OMFI representation of the sequence created in your Avid editing application. The OMF Interchange format is the result of cooperative efforts of many industry and standards partners and Avid Technology, Inc.

Any other program that supports OMFI can read OMFI files, even if the program resides on a different computer platform. As a result, with OMFI, you can transfer between different applications on different platforms without worrying about cross-platform translations. This can be very effective for importing animation or audio files created on proprietary platforms.

To avoid errors and incompatibilities when you import and export OMFI files, observe the recommendations in "File Format Specifications" on page 735.

Exporting Through AAF

Advanced Authoring Format (AAF), is a cross-platform, multimedia file format that allows interchange of media and composition information between AAF-compliant applications. These applications are primarily content creation tools such as Avid editing applications, Avid DS, and Sonic Foundry's Sound Forge®, to name a few.

There are two general types of data in an AAF file:

- Media such as audio and video
- Composition information, or metadata, that provides the instructions needed to combine and modify the media portions of the AAF file to produce a complete multimedia program

When you export sequences with effects through AAF, certain effect types are not exported to the AAF file. When you check compositions into an asset manager through AAF, all effects are exported. For export to Avid DS, use AFE files. See "Exporting Projects and Bins Using AFE Files (Windows Only)" on page 529.

Selecting an OMFI or an AAF Transfer Method

OMF Interchange and AAF, as implemented in Avid editing applications, provide two basic methods for exporting files.

Method 1: Compositions with Linked Media

Avid editing applications can export an OMFI or an AAF file that contains only the editing information about a selected master clip or sequence. The file also contains links to the media used in the clip or sequence. You then need to transfer the OMFI or AAF file to the other system, and either transfer the media files or recapture the media. After you have transferred or recaptured the media, you can transfer revised composition-only files. However, if you consolidate the media, you must transport the consolidated media files, as well. You can consolidate media during the export, see "Exporting As an OMFI or an AAF File" on page 525, or before the export. See "Consolidating Media" in the Help.

Method 2: Compositions with Embedded Media

Avid editing applications can export an OMFI or an AAF file that contains all the editing information for the selected master clip or sequence along with the video and audio media files for that master clip or sequence. See "Exporting As an OMFI or an AAF File" on page 525.

Exporting As an OMFI or an AAF File

You cannot export OMFI files that are larger than 2 GB. If you exceed this limit, an error message is displayed. For information on exporting large sequences, see "Preparing to Export a Sequence" in the Help.

When you export sequences with effects through AAF, certain effect types are not exported to the AAF file. When you check compositions into an asset manager through AAF, all effects are exported. For export to Avid DS, use AFE files. See "Exporting Projects and Bins Using AFE Files (Windows Only)" on page 529.

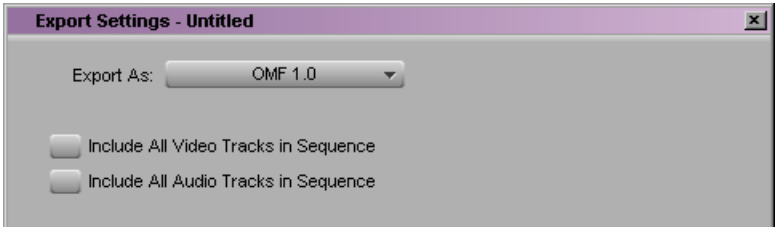
To export master clips or sequences as an OMFI or an AAF file:

1. Prepare the sequence, as described in "Preparing to Export a Sequence" in the Help.
2. Select a clip or a sequence to export, as described in "Exporting Frames, Clips, or Sequences" in the Help.
3. Select File > Export.

   The Export As dialog box opens.
4. Click the Export Settings menu, and select a setting.

   If you want to create a new setting, select Untitled. You can create settings in advance. See "Customizing Export Settings" in the Help.
5. Click the Options button.

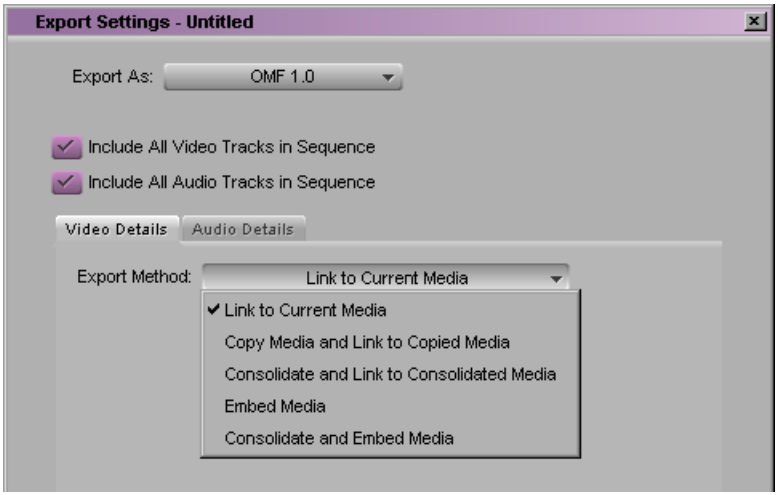
   The Export Settings dialog box opens.



6. Click the Export As menu, and select OMF 1.0, OMF 2.0, or AAF.

7. Select other options as described in "Export Settings: OMFI, AAF, and AFE" on page 669.

For additional guidelines on suitable export options for AAF export to Pro Tools, see "Guidelines for Exporting AAF Files to Pro Tools" on page 527.



8. Do one of the following:
   - To save your settings in the existing settings file, click Save.
   - To create a new settings file, click Save As.

     The Save Export Setting dialog box opens.

     Name the setting by typing a name in the Setting Name text box, and click OK.
9. In the Export As dialog box, select the destination folder for the file.
10. (Option) Change the file name.

    In most cases, keep the file name extension the same.
11. Click Save.

    The file is exported to the selected destination.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Guidelines for Exporting AAF Files to Pro Tools

You use the same basic method to create an AAF export for use with Pro Tools that you use when creating any other type of AAF export. For more information, see "Exporting OMFI and AAF Files" on page 523.

Several of the options you can select in the Export Settings dialog box have particular significance for exports to Pro Tools, so you need to select your options with care. The following table provides information on these settings. (For complete information on all the options available in the Export Settings dialog box for AAF export, see "Export Settings: OMFI, AAF, and AFE" on page 669.)

Export Settings Guidelines for AAF Export to Pro Tools

Setting	Guidelines
Media Destinations (Video Details and Audio Details tabs)	• Using the Folder option with "Use Same Folder as AAF File" is very convenient for moving files back and forth between the Avid editing application and Pro Tools. If you select Folder and then check "Use Same Folder as AAF File," your Avid editing application stores the media in the same folder as the exported AAF files (the folder that you select in the Export As dialog box when your start the export operation). For example, you can easily store both the AAF files and the media in a single folder on a Firewire drive that you can move between the editing application system and the Pro Tools system. You can also select Consolidate Media from the Export Method menu to copy consolidated media instead of all media. • The Embedded in AAF option is not generally useful for export to Pro Tools because Pro Tools does not support embedded video media in AAF files.

Export Settings Guidelines for AAF Export to Pro Tools (Continued)

Setting	Guidelines
Export Method: Video Mixdown (Video Details tab)	• The Mixdown with Video Edits option is only compatible with Pro Tools v7.2 or later, and takes advantage of the fact that Pro Tools v7.2 or later can display multiple video tracks. This allows you to add a video track that shows the video edits. This can be very useful to the Pro Tools editors because it allows them to view the edit points between the various video clips without actually importing the individual video files into Pro Tools. The system creates the following tracks as part of the export: - Video tracks that represent each track and edit in the original sequence - A “render track” that contains the single video mixdown track The system stores the metadata for the video mixdown “render track” within the AAF file. The render track points to the actual mixed-down video media file. If you open the exported sequence in an Avid editing application, you do not see the video mixdown track. However, when you import the file into Pro Tools v7.2 or later, Pro Tools imports the video mixdown track as a separate video track. Pro Tools composites the edit points from all of the original Avid video tracks into a single track. Pro Tools displays the video edit track as well as the video mixdown (render) track. This allows the Pro Tools editor to view the video edits. One benefit to this method is that you only bring the video mixdown into Pro Tools. The clips in the edit tracks do not reference any media. They simply match up with the video mixdown. • The Mixdown without Video Edits option is compatible with all versions of Pro Tools, and is the only option suitable for versions of Pro Tools earlier than v7.2. This option replaces all of the video tracks with a single video track named Video Mixdown in the Track Panel.

Exporting Projects and Bins Using AFE Files (Windows Only)

AFE (Avid File Exchange) files are an efficient way to transfer project information between Avid applications. For example, you can use AFE files to transfer projects and bins from an offline to an Avid DS finishing system.

You can import an AFE file into Avid DS v6.0 or later only.

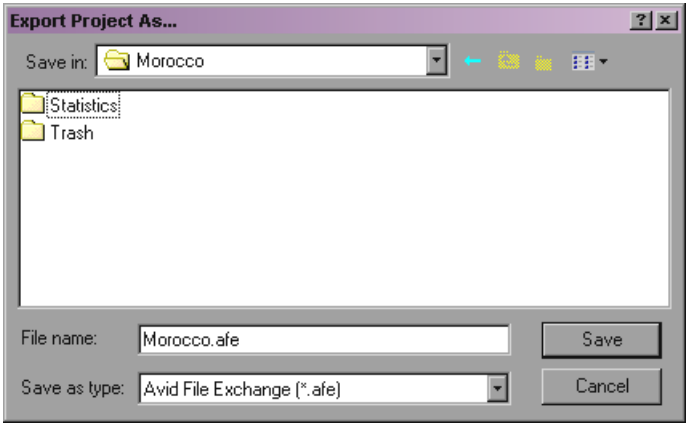
AFE files are based on AAF (Advanced Authoring Format) technology. AFE files, however, are especially designed for sharing project information among Avid applications. AFE files let you transfer one or more bins, their contents, and information about the contents, including master clips, subclips, titles, and sequences.

Specific information for transferring projects to Avid DS is contained in the Avid DS Conform Guide*, which is available from the Avid Knowledge Base at www.avid.com/onlinesupport or the Avid DS Support Center at www2.softimage.com.*

To create an AFE file that includes all bins in a project:

1. Click the project window and select File > Export.

   The Export Project As dialog box opens.



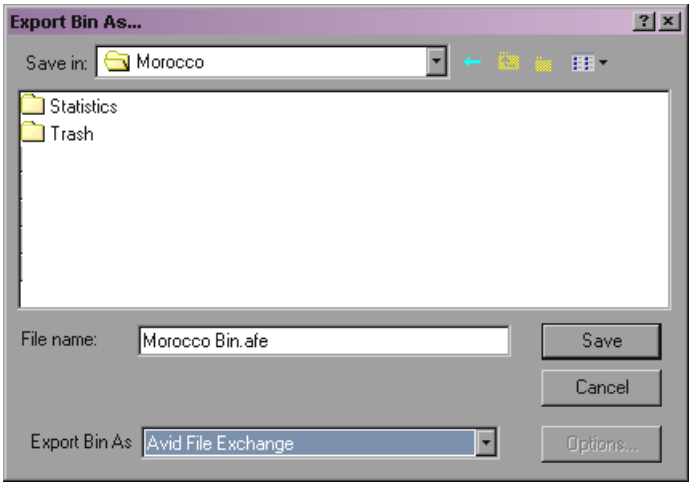
2. Select a location, name the file, and click Save.
3. Transfer the AFE file to a location you can access from the other Avid application.

   You can use removable media, a network connection, or an Avid Unity shared storage system.

To create an AFE file that includes the contents of a single bin:

1. Open the bin.
2. Click the bin, and select File > Export.

   The Export Bin As dialog box opens.



3. Select Avid File Exchange from the Export Bin As list.
4. Select a location, name the file, and click Save.
5. Transfer the AFE file to a location you can access from the other Avid application.

   You can use removable media, a network connection, or an Avid Unity shared storage system.

Exporting Video in DV Stream Format

Use the DV Stream format when exporting video that will be combined or processed with other DV-formatted media. This option requires a video track.

The DV Stream format appears after you have installed QuickTime. If you want to use the QuickTime application for exporting sequences, download the latest version of QuickTime from the Apple® Web site at: www.apple.com/.

To export in DV Stream format:

1. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
2. Select a clip or a sequence to export, as described in “Exporting Frames, Clips, or Sequences” in the Help.

3. Select File > Export.

   The Export As dialog box opens.

4. Click the Export Settings menu, and select a setting.

   If you want to create a new setting, select Untitled. You can create settings in advance. See “Customizing Export Settings” in the Help.

5. Click Options.

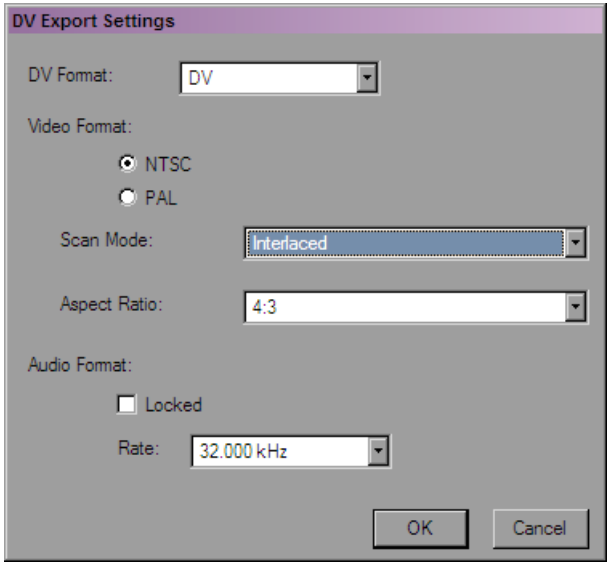
   The Export Settings dialog box opens.

6. Click the Export As menu, and select DV Stream.

7. Select other options as described in “Export Settings: DV Stream” on page 668.

8. Click Format Options.

   The DV Export Settings dialog box opens.



9. Select the DV format, video format, and audio format options you want.

If you select DV as the DV format, you can choose to provide locked or unlocked audio. For compatibility with DV cameras that require unlocked audio, deselect Locked.

If you select DVCPRO as the DV format, audio is always locked and the Locked option is grayed out. Also, the audio rate is always 48 kHz and the Audio Rate menu is grayed out.

10. Click OK.

11. In the Export Settings dialog box, do one of the following:
    - To save your settings in the existing settings file, click Save.
    - To create a new settings file, click Save As.

      The Save Export Setting dialog box opens. Name the setting by typing a name in the Setting Name text box, and click OK.
12. In the Export As dialog box, select the destination folder for the file.
13. (Option) Change the file name.

    In most cases, keep the file name extension the same.
14. Click Save.

    The file is exported to the selected destination.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting QuickTime Movies

You can export a sequence as a QuickTime movie for final distribution or for further processing in another application. There are three basic methods for QuickTime export, as described in the following table.

Selecting a QuickTime Export Option

Option	Description
Same as Source	This option is available when you select QuickTime Movie from the Export Settings dialog box. When you select this option, your Avid editing application copies the media files directly with no resolution change. This method is fast and creates output that uses the same quality as your source files. Selecting Same as Source is the best method to use if you plan to process the video on another system, using a third-party application. See "Exporting As a QuickTime Movie" on page 534.
Custom	This option is also available when you select QuickTime Movie from the Export Settings dialog box. When you select this option, your Avid editing application decompresses the files, processes them, and compresses the files at the requested resolution. This method is slower and often loses quality. In general, you should only use the Custom option if you have to directly export a clip or sequence in a particular file format. See "Exporting As a QuickTime Movie" on page 534. The Custom format is useful if you plan to export to an older ABVB or NuVista system.
QuickTime Reference	QuickTime Reference is available from the Export As menu in the Export Settings dialog box. This option is similar to Same as Source, but your Avid editing application links to the original media files. This is the fastest method of export, but the movie can only be run or processed on your local system or in an Avid Unity workgroup environment. If you want to transfer a QuickTime movie to another system, you must also move the associated media files by creating a self-contained QuickTime movie. See "Exporting As a QuickTime Reference Movie" on page 536.

Exporting As a QuickTime Movie

To export as a QuickTime movie:

1. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
2. Select a clip or a sequence to export, as described in “Exporting Frames, Clips, or Sequences” in the Help.
3. Select File > Export.

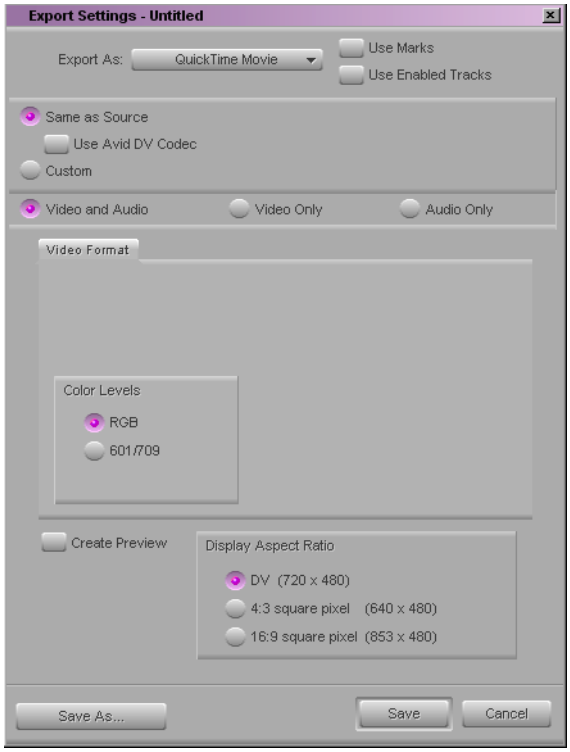
   The Export As dialog box opens.
4. Click the Export Settings menu, and select a setting.

   If you want to create a new setting, select Untitled. You can create settings in advance. See “Customizing Export Settings” in the Help.
5. Click the Options button.

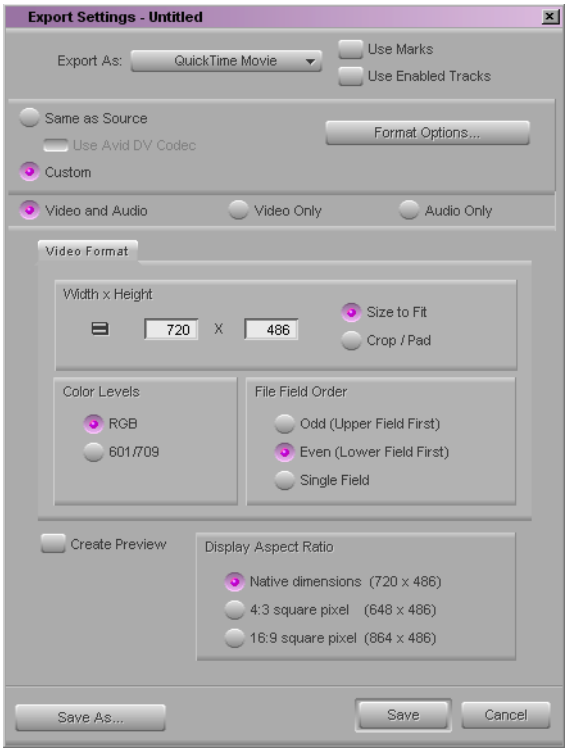
   The Export Settings dialog box opens.

6. Click the Export As menu, and select QuickTime Movie.

If you installed additional QuickTime Export formats, they appear in the menu with tildes (~) before their names. This indicates they have not been qualified and are not supported by Avid.



QuickTime Movie (Same as Source)



QuickTime Movie (Custom)

7. Select the Same as Source option to use the resolution of the source file or select the Custom option to customize your settings.

Using Same as Source results in the fastest export and is usually the best selection for a movie that will be processed by another application. See "Exporting QuickTime Movies" on page 533.

8. Select the remaining options as described in "Export Settings: QuickTime Movie Export Options" on page 662.

   To change the codec (*co*mpressor/*dec*ompressor) used for compression, click the Format Options button. For a description of the options, see "Export Settings: QuickTime Movie Settings" on page 664.

9. Do one of the following:
   - To save your settings in the existing settings file, click Save.
   - To create a new settings file, click Save As.

     The Save Export Setting dialog box opens. Name the setting by typing a name in the Setting Name text box, and click OK.
10. In the Export As dialog box, select the destination folder for the file.
11. (Option) Change the file name.

    In most cases, keep the file name extension the same.
12. Click Save.

    The file is exported to the selected destination.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting As a QuickTime Reference Movie

A QuickTime reference movie is a QuickTime movie that contains composition information but no movie data. Instead, the movie contains pointers to the original media in the OMFI MediaFiles directory or the Avid MediaFiles directory on local or network media drives. Because the QuickTime reference movie does not contain media, the file is much smaller than a QuickTime movie, usually only a few kilobytes per file. Therefore, exporting a sequence as a QuickTime reference movie is faster and takes up less disk space than exporting a sequence as a QuickTime movie. When you play back the movie in QuickTime Player, the movie references the media files for playback.

QuickTime reference movies are useful as long as you are working with Avid media files available on your local system or in an Avid Unity workgroup. Advantages are speed and small file size because the system does not copy the source media files into the exported QuickTime file. However, if you expect to move the exported QuickTime file to a system that doesn't have access to the media, then you should use the standard QuickTime export so the media files and QuickTime wrapper can be moved as one file.

To export as a QuickTime reference movie:

1. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
2. Select a clip or a sequence to export, as described in “Exporting Frames, Clips, or Sequences” in the Help.
3. Select File > Export.

   The Export As dialog box opens.

4. Click the Export Settings menu, and select a setting.

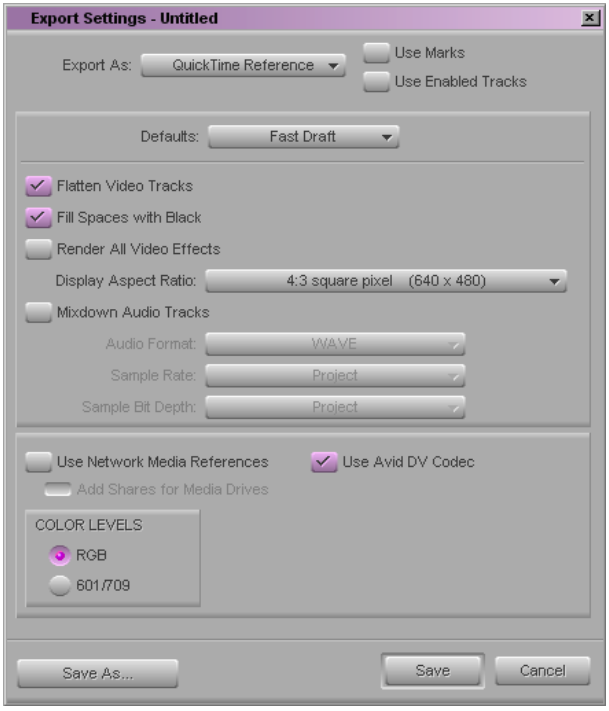
   If you want to create a new setting, select Untitled. You can create settings in advance. See “Customizing Export Settings” in the Help.

5. Click Options.

   The Export Settings dialog box opens.

6. Click the Export As menu, and select QuickTime Reference.

   The Export Settings dialog box displays the QuickTime Reference options.



7. Select other options as described in “Export Settings: QuickTime Reference Options” on page 659.

8. Do one of the following:

   - To save your settings in the existing settings file, click Save.
   - To create a new settings file, click Save As.

     The Save Export Setting dialog box opens.

     Name the setting by typing a name in the Setting Name text box, and click OK.

9. In the Export As dialog box, select the destination folder for the file.

10. (Option) Change the file name.

    In most cases, keep the file name extension the same.

11. Click Save.

    The file is exported to the selected destination.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Using Avid Codecs for QuickTime

The following Avid codecs for QuickTime are installed automatically when you install your Avid editing application. You can use these codecs when exporting QuickTime files from your Avid system or from third-party applications for fast import into an Avid system:

- Avid 1:1x (Uncompressed MXF 8-bit or 10-bit resolution)
- Avid DNxHD™ (HD MXF 8-bit and 10-bit resolutions)
- Avid DV (DV 25/DV 50 resolutions)
- Avid DVCPRO (DVCPRO MXF resolution)
- Avid Meridien™ Compressed (JFIF resolutions)
- Avid Meridien Uncompressed (OMF 8-bit resolution)
- Avid MPEG-50 mbit (MPEG-IMX™ resolutions)
- Avid Packed (Uncompressed MXF 10-bit resolution)

The Avid codecs create encapsulated media files for export of high-resolution files that are readable within QuickTime applications. The Avid codec you use to export the file must be loaded on the system running the QuickTime application for the application to read the exported file. See "Installing or Copying the Avid Codecs for QuickTime on Other Systems" on page 543.

You get the best results by using the Same as Source option. See "Exporting As a QuickTime Movie" on page 534.

To export a clip or sequence by using one of the Avid codecs:

1. Prepare the sequence, as described in "Preparing to Export a Sequence" in the Help.
2. Select a clip or a sequence to export, as described in "Exporting Frames, Clips, or Sequences" in the Help.
3. Select File > Export.

   The Export As dialog box opens.

4. Click the Export Settings menu, and select a setting.

   If you want to create a new setting, select Untitled. You can create settings in advance. See “Customizing Export Settings” in the Help.

5. Click the Options button.

   The Export Settings dialog box opens.

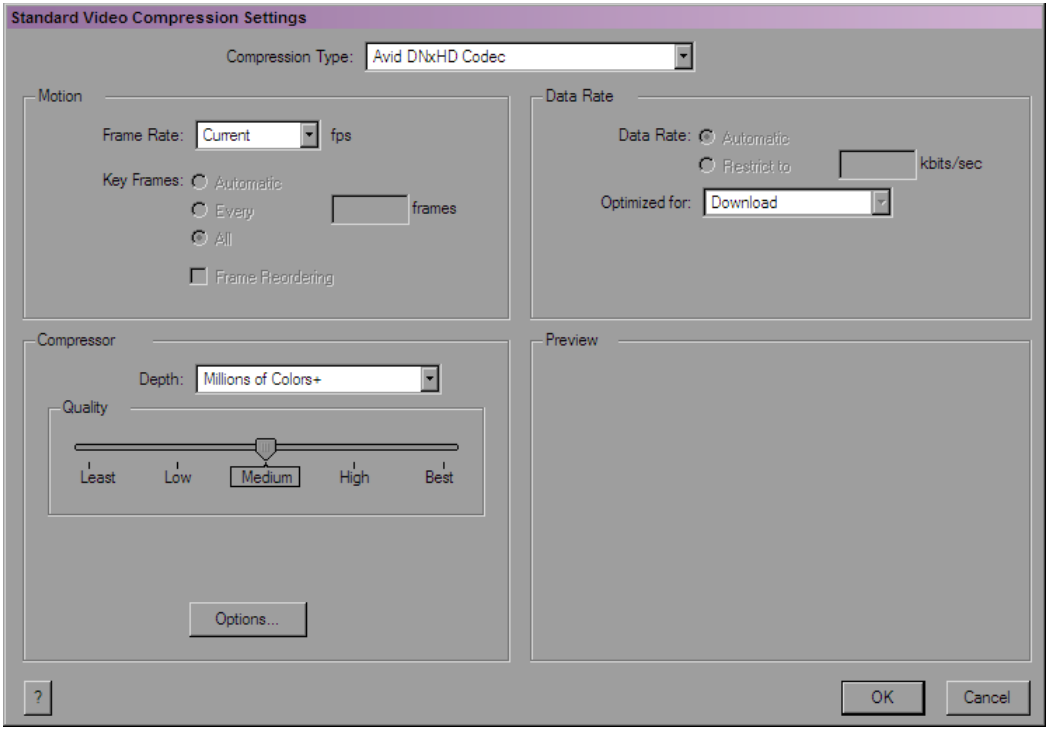
6. Click the Export As menu, and select QuickTime Movie.
7. Select the Custom option.
8. Click the Format Options button.

   The Movie Settings dialog box opens.

9. Click Settings in the Video area.

   The Compression Settings dialog box opens.

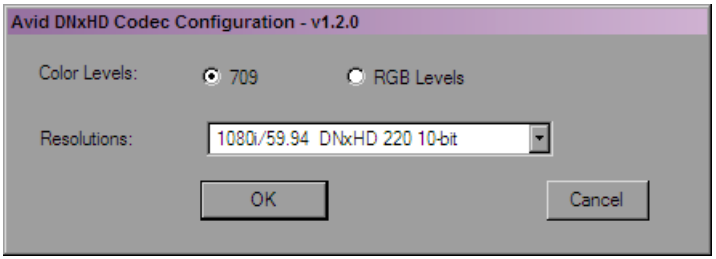
10. Select the codec that you want to use for export.

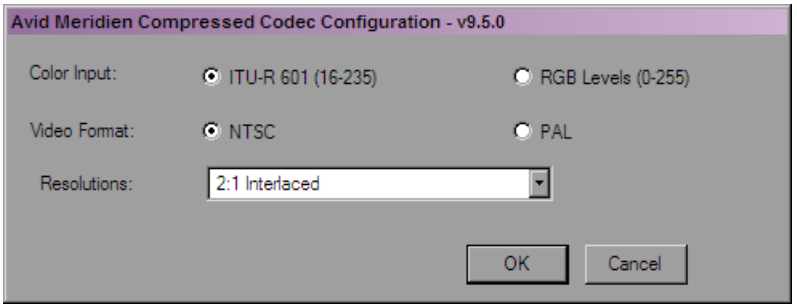


11. Click the Options button.

    A Codec Configuration dialog box opens. The settings depend on the codec that you selected.

The Quality slider does not affect your settings.





12. Select the settings that you want, and click OK.

    For Color Levels or Color Input, select the color levels of the source media. If you are exporting from an Avid editing system, use ITU-R 601 (SD) or 709 (HD).

13. Click OK in the Compression Settings dialog box.
14. Click OK in the Movie Settings dialog box.

    The Export Settings dialog box reopens.

15. Do one of the following:

    - To save your settings in the existing settings file, click Save.
    - To create a new settings file, click Save As.

      The Save Export Setting dialog box opens. Name the setting by typing a name in the Setting Name text box, and click OK.

16. In the Export As dialog box, select the destination folder for the file.
17. (Option) Change the file name.

    In most cases, keep the file name extension the same.

18. Click Save.

    The file is exported to the selected destination.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting As an AVI File (Windows Only)

To export as an AVI file:

1. Prepare the sequence, as described in “Preparing to Export a Sequence” in the Help.
2. Select a clip or a sequence to export, as described in “Exporting Frames, Clips, or Sequences” in the Help.
3. Select File > Export.

   The Export As dialog box opens.
4. Click the Export Settings menu, and select a setting.

   If you want to create a new setting, select Untitled. You can create settings in advance. See “Customizing Export Settings” in the Help.

5. Click the Options button.

   The Export Settings dialog box opens.

6. Click the Export As menu, and select AVI.
7. Select the AVI options you want.

   "Export Settings: AVI (Windows Only)" on page 672 describes the AVI settings options in the Export Settings dialog box. In the Video Format tab, you can also select further options by clicking the Codec Options button.
8. Select an AVI codec by clicking Codec Options.

   The Video Compression dialog box opens.
9. Select the compressor you want, and click the Configure button to further configure the codec.

   For more information, see "Export Settings: AVI Video Compression (Windows Only)" on page 674.
10. Click OK to close the Video Compression dialog box and to return to the Export Settings dialog box.

11. Do one of the following:
    - To save your settings in the existing settings file, click Save.
    - To create a new settings file, click Save As.

      The Save Export Setting dialog box opens. Name the setting by typing a name in the Setting Name text box, and click OK.
12. In the Export As dialog box, select the destination folder for the file.
13. (Option) Change the file name.

    In most cases, keep the file name extension the same.
14. Click Save.

    The file is exported to the selected destination.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Installing or Copying the Avid Codecs for QuickTime on Other Systems

When you install the Avid editing application on your system, the Avid Codecs for QuickTime are automatically installed. If you want to export a QuickTime movie from a third-party application such as Adobe After Effects® for use on an Avid system, you should have the appropriate Avid codec installed on the system running the third-party application.

You can either install the Avid Codecs directly from the Avid editing application CD-ROM or copy them from one system to another.

To install the Avid QuickTime Codecs from the application CD-ROM on a system without an Avid editor:

1. Insert the Avid application CD-ROM.
2. Click Install Products.
3. Click Install Avid QuickTime Codecs.
4. Follow the instructions in the installation program.

   The Avid QuickTime Codecs install on your system.

To copy the Avid QuickTime Codecs from one system to another system:

1. On your Avid system, open one of the following folders:

   (Windows) *drive*:\Program Files\QuickTime\QTComponents

   (Windows) *drive*:\Windows\System32

   (Macintosh) MacintoshHD/Library/QuickTime

2. Copy the codecs you need to a removable device or network server.

   The following table describes the codecs:

Codec (Windows)	Codec (Macintosh)	Description
AvidAV1xCodec.qtx	QTAvidOneToOneXCodec	Avid 1:1x codec (Uncompressed MXF 8-bit or 10-bit)
AvidAVd1Codec.qtx	QTAvidDV100Codec	Avid DVCPRO codec (MXF)
AvidAVdnCodec.qtx	QTAvidDNXHDCodec	Avid DNxHD codec (MXF)
AvidAVdvCodec.qtx	QTAvidDVCodec	Avid DV codec (DV 25 and DV 50, OMF and MXF)
AvidQTAVjiCodec.qtx	QTAvidMeridienCompressedCodec	Avid Meridien Compressed codec (OMF 8-bit)
AvidAVmpCodec.qtx	QTAvidMPEG2IMXCodec	Avid MPEG 50 codec (MPEG-IMX, OMF and MXF)
AvidAVpkCodec.qtx	QTAvidPackedCodec	Avid Packed codec (Uncompressed MXF 10-bit)
AvidQTAVuiCodec.qtx	QTAvidUncompressedCodec	Avid Meridien Uncompressed codec (OMF 8-bit)

3. On the other system, copy the files to one of the following folders:

   (Windows) *drive*:\Program Files\QuickTime\QTComponents

   (Windows) *drive*:\Windows\System32

   (Macintosh) MacintoshHD/Library/QuickTime

Once the Avid Codecs for QuickTime are installed on the system, you can export files from the QuickTime compatible application for reimport into the Avid editing system.

Exporting from a Third-Party QuickTime or AVI Application

To export files from a QuickTime compatible application or from an AVI compatible application on a Windows system for import (or reimport) into your Avid system:

1. Make sure the applicable codec is installed on the system. See “Installing or Copying the Avid Codecs for QuickTime on Other Systems” on page 543.
2. Conduct the export procedure according to the procedures used by the particular software.
3. When you get to the step where the standard Export Settings dialog box opens, select the applicable Avid compressor.

   For QuickTime exports, most applications have format options similar to those described in “Export Settings: QuickTime Movie Export Options” on page 662. Make sure you select settings that will be compatible with your existing media on the Avid system.

If you select a nonstandard frame size, your Avid system does not import the file quickly.

4. Complete the export.

Exporting as Windows Media (Windows Only)

Your Avid editing application allows you to export your sequence as native Windows Media. Before you perform any export procedures, make sure you have reviewed “Preparing to Export a Sequence” in the Help.

Exporting Using an Avid Supplied Template (Windows Only)

Your Avid editing application includes a number of Windows Media templates you can use to export media.

To export as Windows Media using an Avid-supplied template:

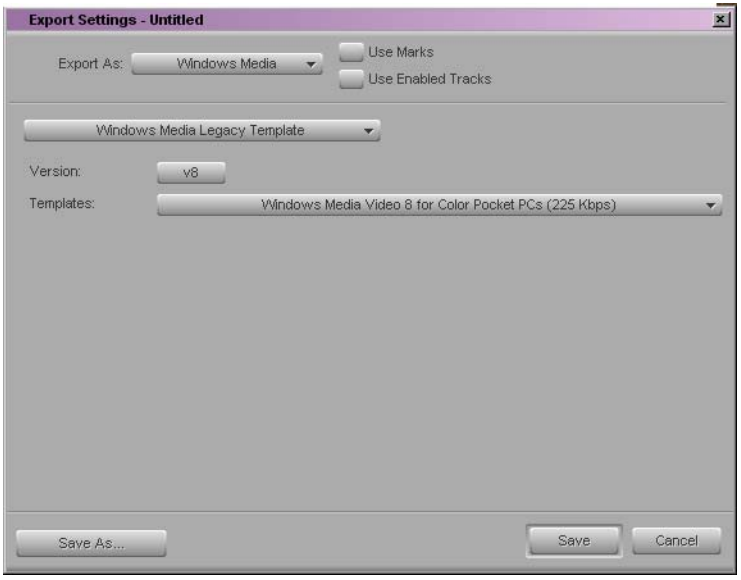
1. Select the sequence or clips to export.
2. Select File > Export.

   The Export As dialog box opens.
3. Click Options.

   The Export Settings dialog box opens.
4. In the Export As menu, select Windows Media.
5. (Option) Select Use Marks.

   When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
6. (Option) Select Use Enabled Tracks.

   When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.



7. Select Windows Media Legacy Template.
8. Click the Version button, and select v8, v7 or v4.

   This refers to the available version 8, version 7, and version 4 Windows Media templates.
9. Click the Templates button, and select the Windows Media option that best fits your needs.

Windows Media Legacy Template compatibility is subject to Windows media updates.

10. Click Save.
11. In the Export As dialog box, select the destination folder for the file.
12. (Option) Change the file name.

    In most cases, keep the file name extension the same.
13. Click Save.

    The sequence is exported using the selected template.

Exporting Using an Existing Windows Media Profile (Windows Only)

A Profile is a group of settings that matches content type and bit rate with the appropriate audio and video codecs. Profiles have the file name extension .prx. If you have an existing .prx file, select that file to use for the Windows Media export settings.

A .prx file is basically a saved template. You can create and save .prx files to share with others.

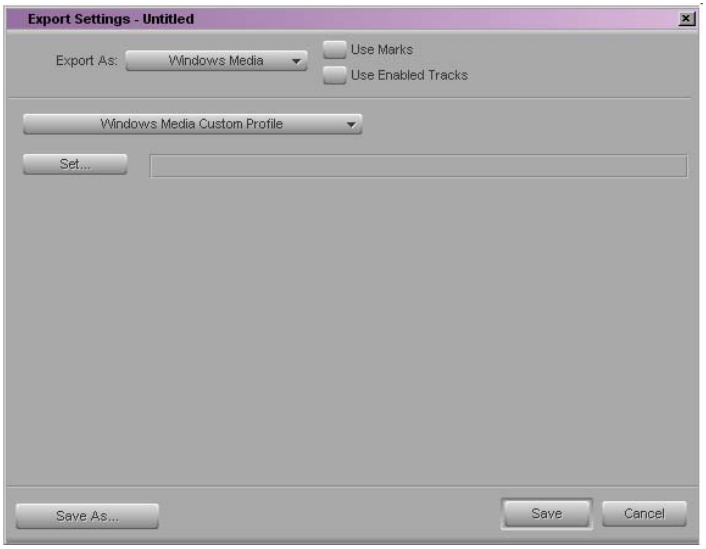
To use an existing Windows Media Profile:

1. Select the sequence or clips you want to export.
2. Select File > Export.

   The Export As dialog box opens.

3. Click Options.

   The Export Settings dialog box opens.



4. From the Export As menu, select Windows Media.
5. (Option) Select Use Marks.

   When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.

6. (Option) Select Use Enabled Tracks.

   When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.

7. Select Windows Media Custom Profile.
8. Click Set.
9. Browse to the location where the .prx file is located on your system, and select the file.
10. Click Open.
11. Click Save.
12. In the Export As dialog box, select the destination folder for the file.
13. (Option) Change the file name.

    In most cases, keep the file name extension the same.

14. Click Save.

    The file is exported using the selected profile settings.

Exporting Using a Custom Profile (Windows Only)

Your Avid editing application allows you to create custom audio and video profiles. Once you create the profile, you can use the settings in that profile to export a sequence.

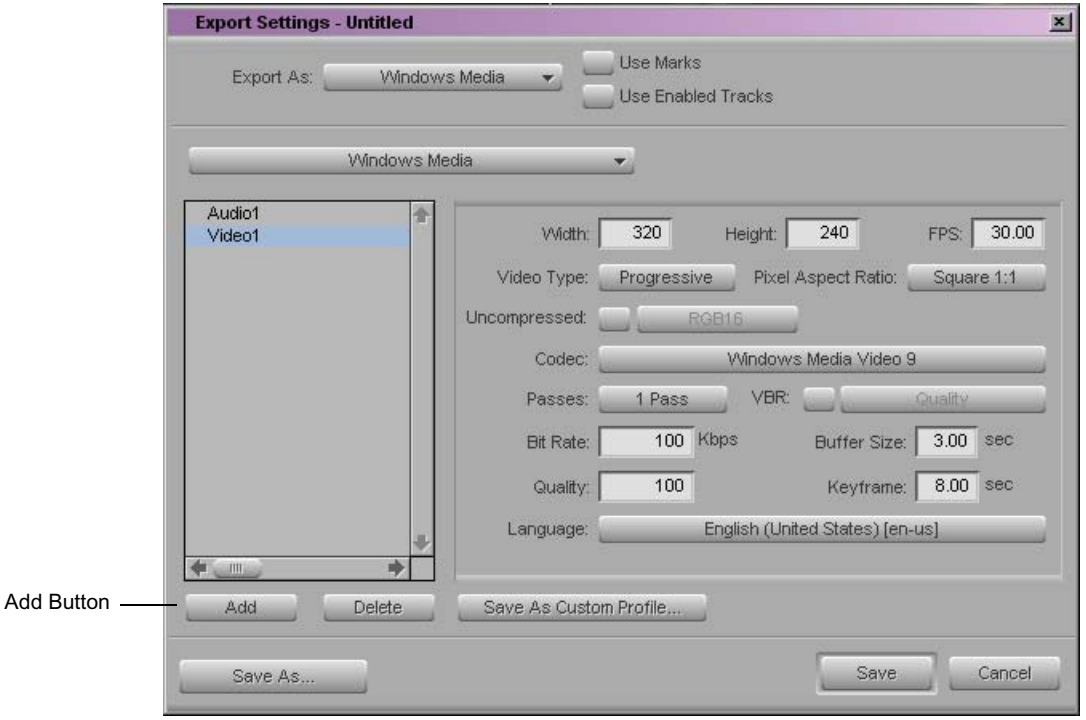
Creating a Custom Video Profile (Windows Only)

To create a custom video profile:

1. Select the sequence or clips you want to export.
2. Select File > Export.

   The Export As dialog box opens.
3. Click Options.

   The Export Settings dialog box opens.



4. In the Export As menu, select Windows Media.
5. (Option) Select Use Marks.

   When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.

6. (Option) Select Use Enabled Tracks.

   When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.

7. Click the Add button and select Video.
8. Choose the custom profile settings according to "Windows Media Options Video Settings" on page 676.
9. (Option) If you want to save the .prx file, do the following:
   a. Click Save As Custom Profile.
   b. Browse to the location on the system where you want to save the .prx file.
   c. Name the file and click Save.

      The .prx file is saved.You are returned to the Export Settings window
10. Click Save to export the sequence.
11. In the Export As dialog box, select the destination folder for the file.
12. (Option) Change the file name.

    In most cases, keep the file name extension the same.
13. Click Save.

    The sequence is exported using the selected profile settings.

Creating a Custom Audio Profile (Windows Only)

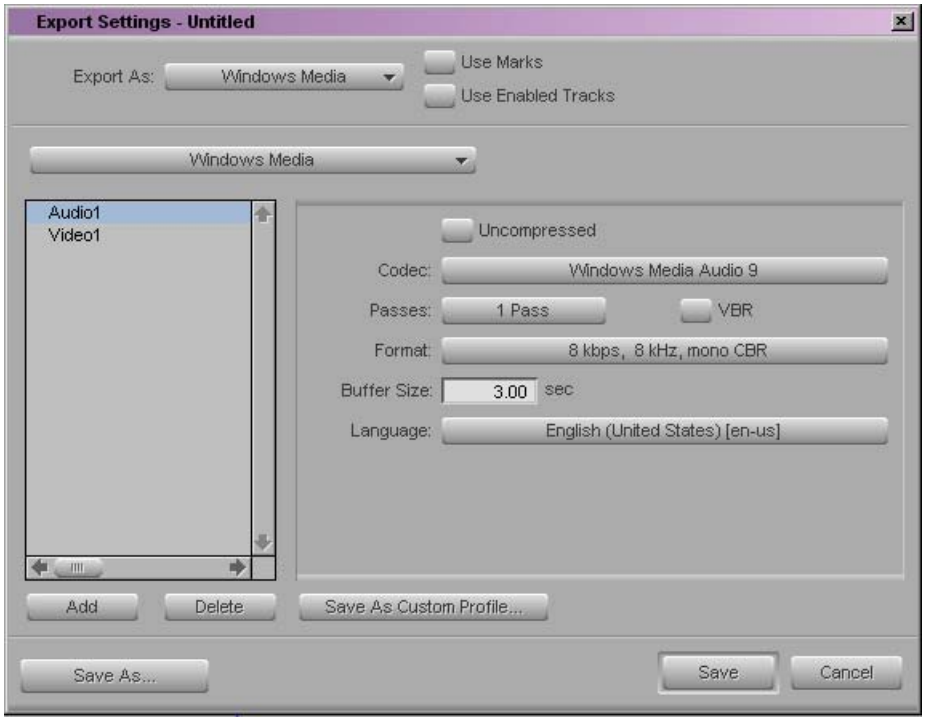
To create a custom audio profile:

1. Select the sequence or clips you want to export.
2. Select File > Export.

   The Export As dialog box opens.

3. Click Options.

   The Export Settings dialog box opens.



4. In the Export As menu, select Windows Media.
5. (Option) Select Use Marks.

   When Use Marks is selected the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.

6. (Option) Select Use Enabled Tracks.

   When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.

7. Click the Add button and select Audio.
8. Choose the custom profile settings according to “Custom Profile Audio Settings” on page 678.

9. (Option) If you want to save the .prx file, do the following:
   a. Click Save As Custom Profile
   b. Browse to the location on the system where you want to save the .prx file.
   c. Name the file and click Save.

      The .prx file is saved. You are returned to the Export Settings window
10. Click Save to export the sequence.
11. In the Export As dialog box, select the destination folder for the file.
12. (Option) Change the file name.

    In most cases, keep the file name extension the same.
13. Click Save.

    The sequence is exported using the selected profile settings.

Exporting Tracks As Audio Files

To export the audio tracks in a clip or sequence as an audio file:

1. (Option) Mark IN or OUT points to identify a particular portion of the audio in a sequence.
2. Select the clip or sequence in one of two ways:
   - Click the monitor that displays the clip or sequence you want to export.
   - Click the clip or sequence in a bin.
3. Select File > Export.

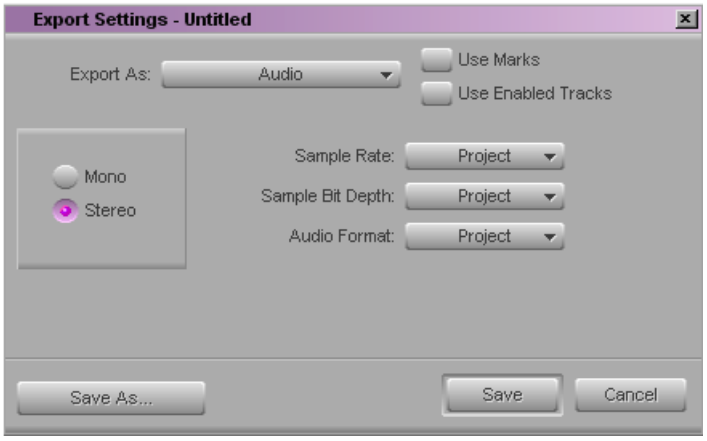
   The Export As dialog box opens.
4. Click the Export Settings menu, and select a setting.

   If you want to create a new setting, select Untitled. You can create settings in advance. See “Customizing Export Settings” in the Help.
5. Click Options.

   The Export Settings dialog box opens.

6. Click the Export As menu, and select Audio.

   The Export Settings dialog box displays the Audio options.



7. Select the options you require. Use the "Export Settings: Audio" on page 680 to make your selections.
8. Do one of the following:
   - To save your settings in the existing settings file, click Save.
   - To create a new settings file, click Save As.

     The Save Export Setting dialog box opens.

     Name the setting by typing a name in the Setting Name text box, and click OK.
9. In the Export As dialog box, select the destination folder for the file.
10. (Option) Change the file name.

    In most cases, keep the file name extension the same.
11. Click Save.

    The file is exported to the selected destination.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting As a Graphic File

You can export a single frame as a graphic file or you can choose to export multiple frames as sequentially numbered files.

To export as a graphic file:

1. Do one of the following:
   - If you plan to export a single frame, mark an IN point to export the marked frame from a bin or a monitor, or move the position indicator to the frame you want to export.
   - If you plan to export multiple frames, use IN and OUT points to identify the region to export.
2. Select File > Export.

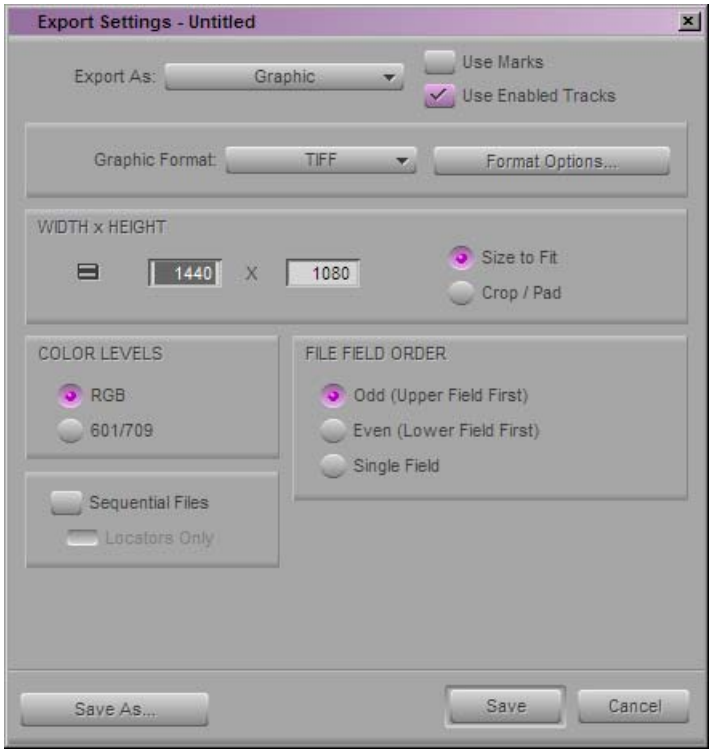
   The Export As dialog box opens.
3. Click the Export Settings menu, and select a setting.

   If you want to create a new setting, select Untitled. You can create settings in advance. See “Customizing Export Settings” in the Help.
4. Click Options.

   The Export Settings dialog box opens.

5. Click the Export As menu, and select Graphic.

   The Export Settings dialog box displays the Graphic options.



6. Click the Graphic Format menu, and select a format. Use “Export Settings: Graphic Format” on page 682 to make your selection.
7. Select other options as appropriate. Use “Export Settings: Graphic” on page 681 to make your selection.
8. Do one of the following:
   - To save your settings in the existing settings file, click Save.
   - To create a new settings file, click Save As.

     The Save Export Setting dialog box opens.

     Name the setting by typing a name in the Setting Name text box, and click OK.
9. In the Export As dialog box, select the destination folder for the file.

10. (Option) Change the file name.

    In most cases, keep the file name extension the same.

11. Click Save.

    The file is exported to the selected destination.

When you are working with the Format Options settings, you can click Defaults to return the settings to their default values.

If a power failure or application error occurs during the export process, the entire file is unusable. You need to repeat the export process.

Exporting Media to XDCAM Devices

XDCAM™ decks and camcorders from Sony® use an optical disc with a capacity to store up to 23.3 GB of media. The XDCAM devices can store media in high-resolution MPEG IMX™, DVCAM™, and XDCAM HD formats.

You can export a clip, subclip, or sequence. You cannot export titles, effects, group clips, or rendered effects. The export mixes down the sequence and creates an XDCAM clip. All clips are given a new sequential name of C*xxxx*.mxf, for example, C0019.mxf. This sequential file name system is created by the Sony deck. If you want to change the file name, your Sony deck needs Sony's firmware version 1.5 or higher.

For information on connecting your XDCAM device, see "Connecting the XDCAM Device" in the Help.

The following table lists the formats and resolutions you can export to the XDCAM device:

XDCAM Resolutions

Format/Resolution	Number of Audio Channels (maximum)
XDCAM HD (1080i/59.94, 1080i/50, 1080p/23.976):	2
XDCAM HD 17.5 Mbits XDCAM HD 25 Mbits XDCAM HD 35 Mbits HDV 1080i (25 Mbits CBR)	
DVCAM:	2
DV 25 411 (NTSC and PAL) DV 25 420 (PAL)	

XDCAM Resolutions (Continued)

Format/Resolution	Number of Audio Channels (maximum)
MPEG IMX: (NTSC and PAL) MPEG 30 MPEG 40 MPEG 50	2

Exporting to XDCAM

You can export NTSC and PAL projects. Depending on the format (SD or HD), you need to use the appropriate XDCAM device (if you export SD media, use an XDCAM SD device; if you export HD media, you must use an XDCAM HD device).

To export to an XDCAM device:

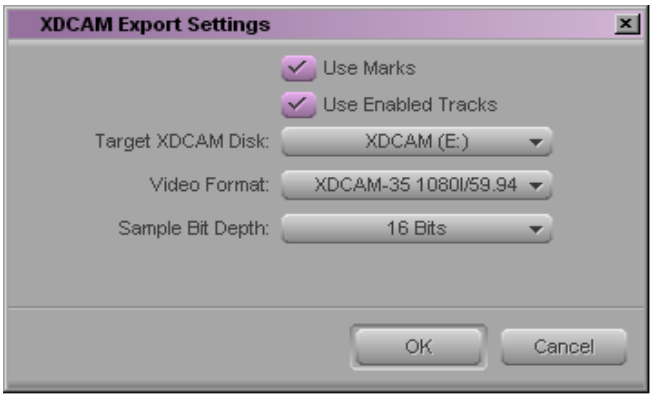
1. Connect your XDCAM device.
2. Select the appropriate mode on your XDCAM device that corresponds to the video format that you will be exporting.

   For example, set your XDCAM device to 1080i 59.94 if you want to export a clip or sequence at XDCAM-35 1080I/59.94.
3. Select the sequence or clips to export.
4. With an XDCAM device connected to your system, select Output > Export to Device > XDCAM.

   If you have a sequence loaded in the Record monitor, the sequence is exported when you select Export to Device from theOutput menu.

You can also right-click the clip or sequence in a bin and select Export to Device.

The XDCAM Export Settings dialog box opens.



5. (Option) Select Use Marks.

   When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.

6. (Option) Select Use Enabled Tracks.

   When Use Enabled Tracks is selected, the system uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.

7. Select an XDCAM disk from the Target XDCAM Disk list.

   If the target XDCAM disk you are exporting to already has other clips on it, you are only allowed to export a clip with the same number of audio tracks. For example, if the target XDCAM disk has a clip with 4 tracks of audio, you cannot export a new XDCAM clip with 2 tracks. You either have to reformat the disk and wipe it clean or add two dummy tracks to your 2-track sequence before you export.

8. Select a video format:

   - For SD projects, select DV-25, IMX30, IMX40, or IMX50.
     For SD, a disk cannot have mixed formats. For example, a disk that contains IMX40 material can only have IMX40 media added to it, unless you reformat the disk.
   - For HD projects, select XDCAM-35, XDCAM-25, or XDCAM-17.
     For HD, a single disk can have clips with mixed bit rates (17.5, 25, and 35 Mbits). Additionally, a sequence that is being exported to an HD XDCAM disk can have mixed bit rates, as well.

   If your exported sequence has more than two audio tracks, only two tracks are exported, even though the Sony XDCAM device is capable of handling 4 to 8 tracks. If your sequence has more than two tracks, they are mixed down during export.

9. Select a Sample Bit Depth: 16 or 24 bits.

   For HD projects, select 16 bits. XDCAM HD devices are not capable of handling 24 bits.

10. Click OK.

    Sony applies its own file-naming convention. All exported clips are given a new sequential name of Cxxxx.mxf, for example, C0019.mxf.

    A progress bar appears displaying the new Sony XDCAM sequential clip name. The sequence is exported.

Chapter 16

Generating Output: Advanced

Your Avid editing application provides tools for generating output for individual tracks or entire sequences to various videotape or audiotape formats. You can also generate an edit decision list (EDL) for use in an online suite and a cut list for creating film negatives.

The following topics provide advanced information about output:

- Advanced Video Output Calibration
- Using the Digital Cut Tool: Advanced
- Using EDL Manager
- Using the Matchback Option
- Using FilmScribe
- Preserving Information in the Vertical Blanking Interval
- Preserving HD Closed Captioning and Ancillary Data

For basic information about output, see “Generating Output: Basics” in the Help or in the Basics Guide for your Avid editing application.

Advanced Video Output Calibration

Advanced users and site engineers can use the following procedures to fine-tune output signals by using various test patterns and phase control. You can also adjust output by using the passthrough signal from an input device.

You cannot set separate calibration levels for S-Video output, Composite output, and Component output. When calibrating video output, select one video output for calibration. The two other outputs are not guaranteed to be properly calibrated. If you need to send output to more than one SD device, Avid recommends that you use one analog output (Composite, Component, or S-Video) and one digital output (SDI).

Using Test Patterns

Use the menu of test patterns to calibrate the system output.

To display a test pattern:

- In the Video Output tool, click the Test Patterns menu, and select a pattern.

Calibrating the System with Passthrough Signals

If you work in a production environment in which house standards are used to synchronize a number of devices including the source decks connected to your Avid system, you can calibrate the system one time to conform to existing standards with the least amount of alteration of the signal. This method involves the use of a passthrough signal (a signal that gets sent directly from an input source through to the output channels).

This advanced form of calibration is an alternative to Video Input tool Calibration settings for each source tape, and involves calibrating tapes at the source device, using external time-base correction. You need a signal generator and external Waveform and Vectorscope monitors to calibrate the system with passthrough.

To calibrate using a passthrough signal:

1. Connect a source signal with a test pattern from a signal generator.
2. Select Tools > Video Input Tool.

   The Video Input tool opens.
3. Click the Input menu, and select a video format.

   The selected input provides the passthrough signal.
4. Calibrate the input if necessary by using the Video Input tool, as described in "Calibrating Video Input" in the Help.
5. Save the input calibration settings as the system *Default* setting, as described in "Saving Video Input Settings" on page 153.
6. Select Tools > Video Output.

   The Video Output tool opens.
7. Select Tools > Capture.

   The Capture tool opens.

   With the Capture tool active, the input signal passes through to the output channels.

8. Select an output format in the Video Output tool.

You can precisely match only one output format at a time in phase with the reference signal. In most cases, you should select either Composite or Serial Digital.

9. Calibrate any of the available controls in the Video Output tool while checking the external Waveform and Vectorscope monitors. For example, composite output provides Gain and Saturation controls.

For more information on using the Video Output tool, see "Preparing for Output" in the Help.

10. In the Video Output tool, click the Test Patterns menu, and select a test pattern.

    The test pattern appears and is sent to the output channels (the input signal is no longer passed through). Additional controls are enabled in the Video Output tool for phase control.

11. Make any necessary adjustments to H phase, SC phase, and Hue by using the sliders in the Video Output tool while checking the external Waveform and Vectorscope monitors.

Whenever the Capture tool is active, hue, horizontal phase (H phase), and subcarrier phase (SC phase) are set to values determined by the input circuitry and are not available to control the outputs. These controls appear dimmed during passthrough.

12. Save this setting with an appropriate name:
    a. Click the Settings menu in the Video Output tool, and select Save As.
    b. Type a name.
    c. Click OK.

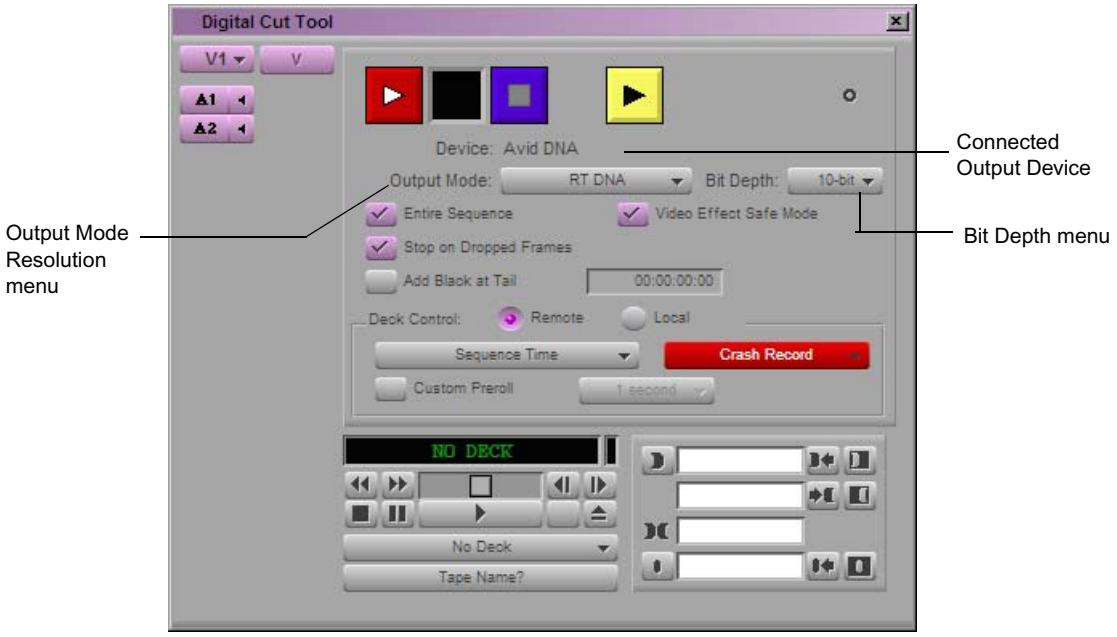
The Video Output setting, a Site setting, applies to all users and all projects on the system. The Video Input setting you saved and named *Default* is recalled each time a new tape is loaded for capturing in the current project only.

Using the Digital Cut Tool: Advanced

The Digital Cut tool provides controls when you record a sequence to tape. This section describes some of the more advanced digital cut features.

Output Mode Resolution Options

The output mode menu in the Digital Cut tool displays the relevant resolution options, depending on your project type and the output device. The connected output device is displayed in the Digital Cut tool.



The following table provides information on the available output resolutions.

There are restrictions for progressive formats. See "Output Mode Resolutions with Progressive Projects" on page 566.

Output Mode Resolution Options

Project Type	Device	Available Output Mode Resolution and Bit Depth	Comments
		RT indicates real-time effects playback is supported	
30i and 25i, or 25p SD Project	Adrenaline, Mojo, Mojo SDI	RT DNA (8-bit or 10-bit) RT DV 25 (8-bit or 10-bit) DV 25	With RT DNA selected, you can output through the following connectors: Composite, S-Video, Component, SDI, or DNA-1394. With RT DNA selected, output is 1:1 uncompressed. With RT DV 25 selected, full real-time effects playback is supported. With DV 25 selected, real-time effects playback is not supported. All media must be DV 25.
23.976p SD Project	Adrenaline, Mojo, Mojo SDI	RT DNA (8-bit or 10-bit) RT DV 25 (8-bit or 10-bit)	
30i, 25i, or 25p SD Project	Separate IEEE 1394 board or Mojo SDI	RT DV 25 (8-bit or 10-bit) RT DV 50 (8-bit or 10-bit) DV 25 DV 50	With DV 50 selected, real-time effects playback is not supported. All media must be DV 50.
HD Project	Adrenaline HD	DNxHD	Does not support real-time effects playback. All media must be DNxHD.
HD Project	Separate IEEE 1394 board or Mojo SDI	DVCPRO HD	Does not support real-time effects playback. All media must be DVCPRO HD.

Performing a digital cut to a serial-controlled deck might not be frame-accurate if the output resolution is set to RT DV 25 or DV 25. When performing a digital cut to a serial-controlled deck, set the output resolution to RT DNA and make sure your output device is connected to a connection other than 1394 (for example, SDI or Composite).

Output Mode Resolutions with Progressive Projects

The availability of the Output Mode resolutions for progressive projects depends on the Output Format play rate in the Digital Cut tool.

The following table describes the Output Mode resolutions for progressive projects.

Progressive Project Output Mode Resolution Options

Project Type	Play Rate	Available Output Mode Resolution and Bit Depth
PAL 25p project	25	DV25 DV50 RT DV50 (8-bit or 10-bit) RT DV25 (8-bit or 10-bit)
NTSC 23.976p projects	23.976	RT DV50 (8-bit or 10-bit) RT DV25 (8-bit or 10-bit)
NTSC 24p projects	24	RT DV50 (8-bit or 10-bit) RT DV25 (8-bit or 10-bit)
PAL 24p Method 1 For information on Method 1 and Method 2, see "Transferring 24-fps Film to PAL Video" on page 812.	25	RT DV50 (8-bit or 10-bit) RT DV25 (8-bit or 10-bit)
PAL 24p Method 2 For information on Method 1 and Method 2, see "Transferring 24-fps Film to PAL Video" on page 812.	24	RT DV50 (8-bit or 10-bit) RT DV25 (8-bit or 10-bit)

Performing a digital cut to a serial-controlled deck might not be frame-accurate if the output resolution is set to RT DV25 or DV25. When performing a digital cut to a serial-controlled deck, set the output resolution to RT DNA and make sure your output device is attached to a connection other than 1394 (for example, SDI or Composite).

Outputting DV 50 and DVCPRO HD Media Directly to a DV Device

You can output DV 50 or DVCPRO HD sequences directly to a DV device. This lets you output without any loss due to compression and decompression.

DV 50 and DVCPRO HD Output

You can output:	If the project is:	And if the output device is:
DV 50	Any SD project	1394
DVCPRO HD	The following HD projects: • 720p/23.976 • 720p/50 • 720p/59.94 • 1080i/50 • 1080i/59.94	1394

To output DV 50 or DVCPRO HD media directly to a DV device:

1. Select the DV 50 or DVCPRO HD sequence you want to output.
2. Render all effects.
3. Do one of the following:

   - Click the DNA/1394 button above the Timeline to display the 1394 label.
   - Select Special > Device > IEEE 1394.

   The 1394 icon displays above the Timeline, and a check mark appears next to IEEE 1394 in the Device menu.
4. Select Output > Digital Cut.

   The Digital Cut tool opens.
5. Select other Digital Cut options.

   For more information, see “Using the Digital Cut Tool” in the Help.
6. Perform the digital cut.

Selecting Output and Timecode Formats for 23.976p, 24p, and 25p Projects

When you are working in a 23.976p, 24p, or 25p project, you can output multiple formats from the same progressive media. You click the Output Format menu in the Digital Cut tool to select the formats you want, as described in "Selecting Output Formats for 23.976p, 24p, and 25p Projects" on page 568.

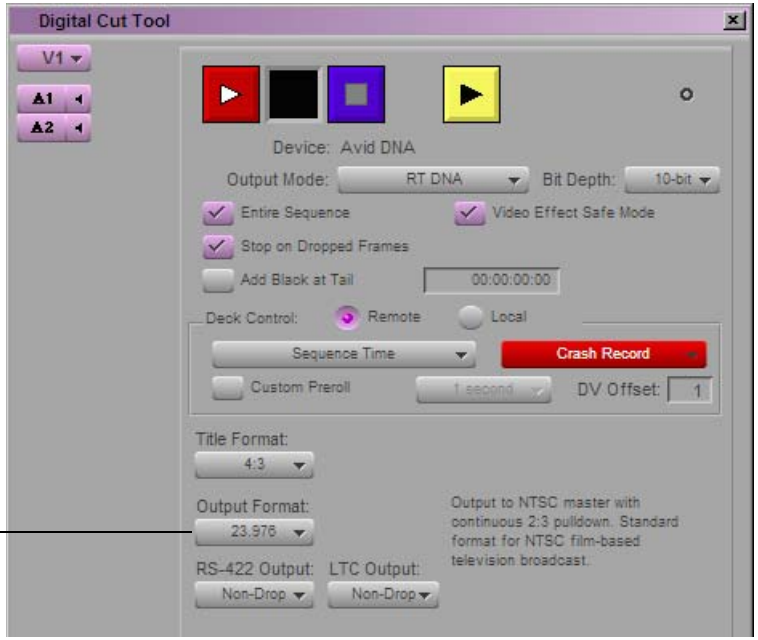
Depending on the format you select, you also need to:

- Select the timecode to output. See "Selecting the Timecode Format for Output" on page 571.
- Indicate the Destination Timecode Rate. See "Indicating the Destination Timecode Rate" on page 573.

Selecting Output Formats for 23.976p, 24p, and 25p Projects

To output a particular format:

1. Select Output >Digital Cut.



Output Format menu

2. Click the Output Format menu, and select a play rate.

A brief description of each output format is displayed in the Digital Cut tool. “23.976p, 24p, and 25p Project Output Options” on page 569 provides more extensive descriptions.

The play rate you select determines how the digital cut is recorded. For example, if you select 23.976, you tell your Avid editing application to slow down the play rate to match the play rate used during an NTSC telecine transfer. When your application records the digital cut, it adds the pulldown frames and re-creates a telecine transfer to an NTSC videotape.

For NTSC output, your Avid editing application automatically sets the pulldown if necessary and turns on an indicator on the Avid Adrenaline.

23.976p, 24p, and 25p Project Output Options

Digital Cut Tool Output Format (Play Rate)	Target Project or System	Pulldown Indicator on Adrenaline	Output Format and Recording Media
23.976 (NTSC)	NTSC TV; video screenings; digital audio workstations (DAWs) that support pulldown	On (0.99)	Picture and sound to NTSC tape; sound to video-referenced audiotape
24 (NTSC)	Audio for film projection; DAWs (video for reference only)	Off (1.00)	Picture and sound to NTSC tape; sound to DAT or mag tape
29.97 (NTSC)	Animation projects; negative cutting with lockbox; some kinescope printing	On (0.99)	Picture and sound to NTSC tape (sound for reference only)
24 (PAL)	Audio for film projection; DAWs (video for reference only)	Off (1.00)	Picture and sound to PAL tape; sound to DAT or mag tape
25 (PAL)	PAL TV; video screenings	Off (1.00)	Picture and sound to PAL tape; sound to DAT or mag tape

The following information describes what happens when you select each of these options:

- **23.976 (NTSC):** Plays back the sequence at 23.976 fps (film rate). This play rate tells the Avid system to replicate a telecine transfer with perfect 2:3 pulldown. The system adds frames and slows the playback speed to create a digital cut to 29.97 fps. Use this option for NTSC video output, such as broadcast masters.
- **24 (NTSC):** Plays back the sequence at 24 fps (film rate). This play rate tells the system to record audio at the film rate. If the system records video, it maintains sync by adding pulldown fields and dropping every 1000th frame. This video should be used for reference only. Use this setting for direct audio output to be used in sync with film projection. Also use this setting when audio media files are being used in a digital audio workstation (DAW) and you need a digital cut for picture reference.

  Before you output the digital cut, make sure you select the correct destination timecode rate. See "Indicating the Destination Timecode Rate" on page 573.
- **29.97 (NTSC):** Plays back the sequence at 29.97 fps. This play rate tells the system to speed up the playback speed *without* adding pulldown fields. As a result, the sequence plays faster (25 percent faster for 24p, 20 percent faster for 25p). Use this option for animations and tape-to-film transfers where the pulldown needs to be removed to have an exact frame-to-frame relationship between the film and video.
- **24 (PAL):** Plays back the sequence at 24 fps. This play rate tells the system to record audio at the film rate. For 25p projects, audio is slowed down 4 percent. Video, when output to tape, can be used only for reference because, to maintain sync, the system replicates a pulldown telecine transfer with one extra pulldown field occurring every 12th and 24th frame. Use this option when audio media files are being used for film projection (PAL Method 2) or in a DAW, and you need a digital cut for picture reference.
- **25 (PAL):** Plays back the sequence at 25 fps. For 24p projects, this play rate tells the system to speed up the sequence by 4.1 percent, creating a frame-to-frame relationship between film and video (PAL Method 1). For 25p projects, there is no change in playback speed. There are no pulldown frames with this setting. Use this option for PAL video output, such as a broadcast master.

Audio play rates differ depending on your project type.

If you are working in a 24p or 25p project, changes in audio rates are as described in the following table:

Audio Play Rates for 24p and 25p Projects

Output Play Rate	24p NTSC Source	24p PAL Source	25p Source
23.976 NTSC	0.1% slowdown	—	—
24 NTSC	No change	—	—
29.97 NTSC	25% speedup	—	—
24 PAL	—	No change	4% slowdown
25 PAL	—	4.1% speedup	No change

If you are working in a 23.976 project, all output play rates are available, but only 23.976 NTSC maintains the original audio quality. For 23.976 NTSC, the audio rate is not slowed down for output and remains at 48 kHz. For 29.97 NTSC, the audio rate is sped up 25 percent and is not usable. Use this output rate for animations and other special applications. 24 fps NTSC requires a sample-rate conversion, so high-quality audio is not guaranteed.

The following table summarizes the change in audio rates for 23.976p output options.

Audio Play Rates for 23.976p Projects

Output Play Rate	Source	Output Audio Rate
23.976 NTSC	23.976 fps	48 kHz (no change)
24 NTSC	23.976 fps	48.048 kHz (0.1% speedup)
29.97 NTSC	23.976 fps	60 kHz (25% speedup)

Selecting the Timecode Format for Output

If you select one of the three NTSC output formats, you need to indicate the timecode format for output: drop-frame or non-drop-frame.

You can designate drop-frame or non-drop-frame timecode for devices connected to one or both of the following outputs:

- RS422 Output (serial port on the computer)
- LTC (LTC OUT on the Avid Adrenaline hardware)

To output LTC timecode, you need to select the option "Generate LTC on Playback" in the General Settings dialog box. For more information, see "Using LTC Timecode for Output" in the Help.

By default, the menus display the timecode format of the sequence you loaded into the Timeline.

Your Avid editing application can generate LTC at 29.97 fps only. See "Indicating the Destination Timecode Rate" on page 573.

To select the timecode format for output:

1. Select Output > Digital Cut.
2. Do one or both of the following:
   - Click the RS422 Output menu, and select Drop or Non-Drop
   - Click the LTC Output menu, and select Drop or Non-Drop

Outputting Drop-Frame and Non-Drop-Frame Timecode Simultaneously for Downstream Encoding

You can output drop-frame and non-drop-frame NTSC timecode simultaneously from a 23.976, 24p, or 25p project. A broadcast production company might need to output drop-frame timecode for a broadcast master while outputting non-drop-frame timecode to track NTSC film pulldown.

Tracking the pulldown is important because some networks require the 2:3 pulldown phase to be inserted in the VITC (vertical interval timecode). Inserting the pulldown phase enables downstream encoding of various compression formats (like MPEG-2) to be faster and of higher quality.

For information about 2:3 pulldown, see "Transferring 24-fps Film to NTSC Video" on page 808.

It is easy to track pulldown information within non-drop-frame timecode, because the relationship stays the same for the length of the digital cut. The Avid system can use LTC to output the non-drop-frame timecode.

To output drop-frame and non-drop-frame timecode simultaneously for downstream encoding:

1. Select Output > Digital Cut.
2. Do the following:
   - Click the RS-422 Output menu, and select Drop.
   - Click the LTC Output menu, and select Non-Drop.

Indicating the Destination Timecode Rate

When you select 24 (NTSC) as your output format, the Destination Timecode Rate menu (labeled Dest. TC Rate) opens. Select a timecode rate that matches the timecode rate of the recording device, such as a DAT deck.

If you select 29.97 fps as your Dest. TC Rate, the sequence duration displayed in the Timecode Duration display of the Digital Cut tool is slightly shorter than the duration shown in the Timeline. This shorter duration occurs because the video play rate is sped up in comparison with the audio timecode rate. If you select 30.00 fps, the sequence duration in the Digital Cut tool matches the sequence duration in the Timeline.

The value you select (29.97 or 30.00) also sets the rate for LTC output, if any, without changing the play rate of the media being output (24 NTSC).

Your Avid editing application can generate LTC at 29.97 fps only. No LTC will be output if you select 30.00.

To indicate the destination timecode rate:

1. Select Output > Digital Cut.
2. Click the Dest. TC Rate menu, and select 29.97 fps or 30.00 fps.

Performing an Insert Edit with Pulldown

If you are working in an NTSC 24p project, and you need to insert a segment into a sequence that has already been cut to tape, your Avid editing application automatically adjusts the insert edit to maintain the correct pulldown.

To perform an insert edit with pulldown:

1. Use IN and OUT points to mark the segment you want to insert.
2. Select Output > Digital Cut.

   The Digital Cut tool opens.
3. Deselect the Entire Sequence option.
4. Select Remote in the Deck Control options area.
5. Select Sequence Time to start the recording at a timecode existing on tape that matches the start timecode of the sequence.
6. Click the menu, and select Insert Edit.

   This menu only appears if you enabled assemble editing in the Deck Preferences dialog box. For more information about this option, see “Enabling Assemble-Edit Recording” in the Help.

7. Click the Deck Selection menu, and select a deck.

   See “Selecting a Deck in the Digital Cut Tool” in the Help.

8. Click the Sequence Track buttons to select the video tracks you want represented in the digital cut. The display of tracks in the Digital Cut tool varies according to the tracks existing in the sequence.
9. Select the video track to record to on the tape by using the Enable Track buttons.
10. Click the Output Options area, and select 23.976 (NTSC) and either 4:3 or 16:9.

11. Click the Play Digital Cut button.

    Your Avid editing application cues the record deck, then plays and records the insert edit. The Avid system automatically adds the correct pulldown fields.

12. To stop the recording at any time, press the space bar or click the Halt Digital Cut button.

Digital Cuts and Audio

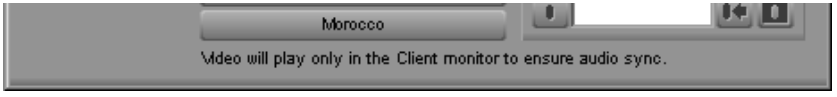
You can use one of several tape formats and methods for audio output, but the following are most common:

- Record a digital cut directly to videotape by using analog output.
- Record a digital cut directly to DAT or DA-88 by using digital output.
- Play the sequence to an audiotape recorder by using analog output.

You cannot control some analog audio decks from the Digital Cut tool. If the deck does not have a serial control port, you need to select Local when you record the digital cut.

Your output choice in the Digital Cut tool automatically sets the pulldown switch).

If you perform an audio-only digital cut, your Avid editing application plays the video tracks in the Client monitor to ensure the most accurate audio sync. A message appears at the bottom of the Digital Cut tool.



Information on connecting decks and cabling varies depending on the Avid DNA device you use. See the appropriate “Connecting Peripheral Equipment” topic for your Avid DNA device in the Help, within the “Using the Avid Adrenaline,” “Using the Avid Mojo,” or “Using the Avid Mojo SDI” sections.

If your sequence contains audio clips with different sample rates, use the Change Sample Rate dialog box to ensure that all the clips have the same sample rate. For more information, see "Changing the Sample Rate for Sequences and Audio Clips" in the Help.

Changing the Default Pulldown Phase for Sequences

During a digital cut to 30-fps NTSC videotape, your Avid editing application defaults to an A-frame pulldown conversion for sequences (subsequences are an exception). If you are appending sequences to the same output tape on which continuous pulldown is required, you might need to change the default pulldown phase (or pullin) to a B frame. A digital cut can begin only on the first field of an A or B frame.

For example, if one cut ends on an A frame, before performing the digital cut of the next sequence, change the pullin for the next sequence to the B frame. You can determine the frame that ends a sequence by checking the Pullout column in the bin that holds the sequence.

If your sequence ends on a B or C frame, edit the sequence to end on an A or D frame to create a continuous 2:3 pulldown.

For more information on film-to-tape transfers, see "Film-to-Tape Transfer Guidelines" on page 817.

To change the default pulldown phase for a sequence:

1. Open the bin that holds the sequence.
2. Check if the Pullin column appears. If not, do the following:
   a. Click the Bin Fast Menu button, and select Headings.
   b. Ctrl+click (Windows) or click (Macintosh) Pullin.
3. Type A or B in the Pullin column.
   - **Pullin A:** The first frame of the sequence plays back as two fields, the second frame as three fields, the third frame as two fields, and so on.
   - **Pullin B:** The first frame of the sequence plays back as three fields, the second frame as two fields, the third frame as three fields, and so on.

Now you can perform a digital cut to append the new sequence.

Understanding DV Digital Cut Delay

DV digital cut delay affects the timing of the DV data sent to the DV device for a digital cut. Increasing the digital cut delay will cause the sequence stream to be to delayed when it is sent to the DV device when digital cut begins. While the system is waiting for this delay, the first frame of the sequence is continually sent to the DV device.

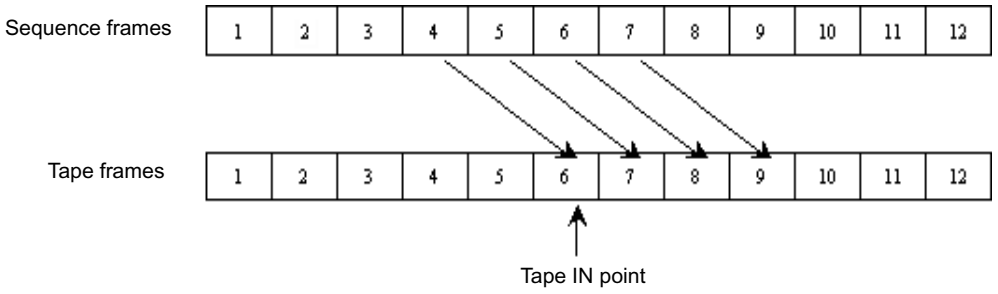
There are several components to this setting.

- The recommended value represents the delay that is found in the machine template for the online DV device. If for some reason, there is no “online” DV device, the recommended value is set to the delay in the machine template of the “offline” DV device. If no DV device is configured in the Deck Configuration and Deck Settings dialog boxes, this value is set to 0.
- If you want to override the recommended digital cut delay, select the Override Recommended Digital Cut Delay option, and type a delay value into the Digital Cut Delay (frames) text box. When a digital cut is performed, the delay value used for the cut is based on whether the Override Recommended Digital Cut Delay option is selected. If the option is deselected, the recommended value is used.

Before setting this delay, you should perform several digital cuts to determine the frame-accuracy behavior of the recording device. Begin with the DV digital cut delay set to 0 frames. If the digital cut frame accuracy of the device is inconsistent, the results of using the delay are also inconsistent. If the sequence is missing frames at the beginning of the digital cut on the tape, increase the delay. If the first frame of the sequence is repeated, decrease the DV digital cut delay. The starting frame of the sequence should change according to your delay.

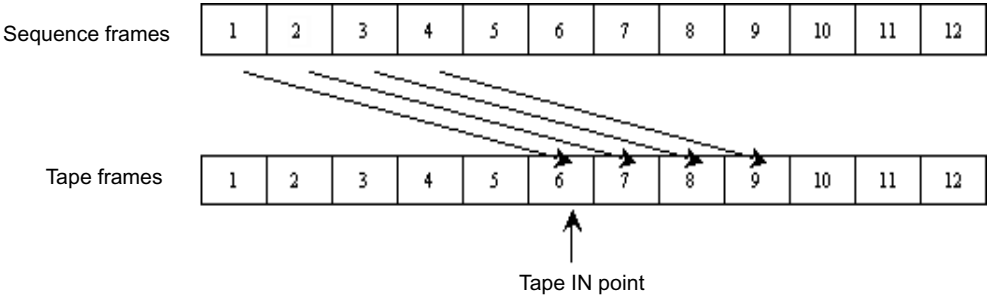
For example, suppose the DV digital cut delay is set to 0 frames. The digital cut is expected to begin with the first frame of the sequence being recorded on the IN point designated on the tape. In this example, the IN point is set to frame number 6. This is where the recording would begin on the tape. However, due to the behavior of the particular DV device, the digital cut does not perform as expected. The first frame of the sequence recorded on the tape is actually the fourth frame, as shown in the following figure.

Digital Cut with no delay



To correct this, the DV digital cut delay should be increased to have the Avid system delay sending the sequence to the device. If the DV digital cut delay is set to three frames, this should cause recording on the tape to begin with the correct sequence frame, as shown in the following figure.

Digital Cut with delay



Delaying the Sequence for a Digital Cut

You can delay the sequence stream being sent to a DV device during a digital cut. This can help you to ensure that the first frame recorded is the first frame of your sequence. For more information, see "Understanding DV Digital Cut Delay" on page 576.

To delay the sequence for a digital cut:

1. Click the Settings tab in the Project window.
2. Double-click Deck Preferences.

   The Deck Preferences dialog box opens.
3. Select Override Recommended Digital Cut Delay.

4. Determine the approximate delay and type the delay in the Digital Cut Delay (frames) text box.
5. Click OK.
6. Perform a digital cut.

   See “Using the Digital Cut Tool” in the HelpUsing the Digital Cut Tool.
7. Repeat this process until you achieve the appropriate delay.

Using EDL Manager

An edit decision list (EDL) is a detailed list of the edits contained in a sequence, including all the timecode and supported effects information required to re-create the sequence in an online videotape suite. The EDL is organized into a series of chronological instructions called *events,* which are interpreted by an edit controller that automates the assembly of the videotape master.

Your Avid editing application includes EDL Manager, an application with powerful features and sorting capabilities to help you prepare an EDL.

To start EDL Manager:

- Select Output > EDL.

For more information on specific features and capabilities of EDL Manager, see the EDL Manager Help.

Using the Matchback Option

The Matchback option on an Avid system, along with the Avid FilmScribe application, allows you to generate a film cut list from a 30-fps or 25-fps video project that uses film as the source material. This video-to-film conversion is useful in a variety of matchback circumstances, including the following:

- Using the Matchback option to generate both a videotape master for the project and a final cut on film.
- Using the Matchback option to generate pull lists for retransferring selects at high quality before online editing.

Matchback supports 16mm, 35mm 3-perf, and 35mm 4-perf formats.

Your system might not include the Matchback option. To purchase the Matchback option, contact your Avid sales representative.

If you plan to use matchback, you must select the Matchback option when you first create the project. See “Creating a New Project” in the Help.

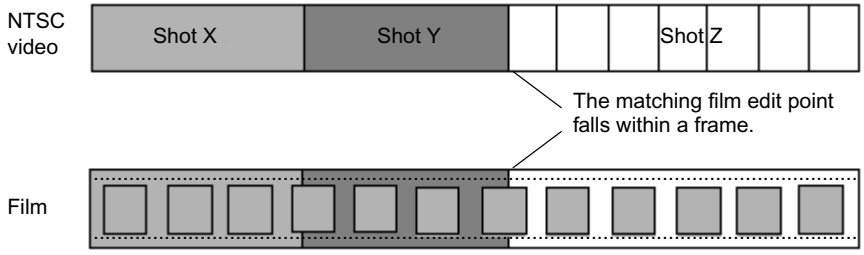
Editors working in a film matchback project for the first time should pay extra attention to duplicate material in the final edited piece. Use Dupe Detection in the Timeline and verify any dupes flagged when delivering a cut negative. For information on dupe detection, see “Detecting Duplicate Frames” on page 374.

How Matchback Works

The matchback process refers to the video edit information for your sequence and performs a conversion to create a matching 24-fps cut list.

Because of the difference in frame rates between video and film (30 fps or 25 fps for video versus 24 fps for film), the conversion of video edit points might fall within a film frame, requiring the addition or subtraction of a frame in that edit event in the resulting cut list.

For example, with a ratio of 24 film frames to 30 video frames, a 7-frame video edit corresponds to approximately 5.6 film frames. However, film cuts cannot include partial frames, so the edit must be rounded to 5 or 6 frames.



To make these adjustments, the following occurs during matchback:

- If the total video-sequence duration at the end of each cut is a frame longer than the film, the system subtracts a frame from the last video edit. If the video is a frame too short, a frame is added to the last video edit.
- Where an essential frame was added to or subtracted from the beginning or end of each edit, the system adds matchback information to the cut list, stating that matchback shortened or lengthened the tail of the clip by one frame. The assistant editor or negative cutter can use this information to check the edit.
- Each track in the sequence must be corrected independently because the start and end points for split edits are different for each track. As a result, the picture and audio for a matchback video edit might be out of sync by no more than one frame.

Matchback Limitations

Matchback is subject to the following limitations:

- The Matchback option uses key numbers to conform the negative, so you must have key-number information entered into the bins for the project.
- You can generate cut lists but not change lists in a matchback project.
- The matchback information applies to the picture only. You must generate a separate list (an EDL, for instance) for conforming the audio source tapes.
- Be sure to remove unwanted match frames (add edits) from your sequence before generating the cut list. Otherwise, the calculation of matchback frames will include these edits. For information about removing match-frame edits, see "Removing Match-Frame Edits" on page 374.

Using FilmScribe

The FilmScribe application provides tools for creating frame-accurate cut lists and change lists from 23.976p, 24p, 25p, and matchback projects. You can use these lists to conform a work print, a film negative, audio tracks, or videotape transfers.

To start FilmScribe:

- Select Output > FilmScribe.

For information on how to use FilmScribe, see the *Avid FilmScribe User's Guide* or the FilmScribe Help.

Your system might not include the FilmScribe application. To purchase FilmScribe, contact your Avid sales representative.

Preserving Information in the Vertical Blanking Interval

You can choose whether or not to display 5 lines above each field in NTSC and 8 lines above each field for PAL and whether to preserve the lines when you perform a digital cut. These lines can be used to store additional encoded information such as closed captioning, edgecodes or key numbers for film projects, or various interactive or enhanced TV codes. This section describes when it is useful to preserve the information and describes the limitations involved when preserving these lines.

You can preserve VBI information for JFIF, uncompressed, and MPEG IMX resolutions. You cannot preserve VBI information for DV resolutions.

In the majority of cases, you should not preserve these extra lines when you perform a digital cut. Only do so if you have a special need for the information.

Line Ranges

Your Avid editing application is capable of capturing 248 lines per field in NTSC or 296 lines per field in PAL. For NTSC, only 243 of these lines are in RP-187's production aperture. For PAL, the number is 288. The additional lines in each field are located immediately above the active part of each of the two fields. These lines (5 per field in NTSC and 8 per field in PAL) can be used for carrying additional data.

The following table lists the extra vertical blanking lines for both NTSC and PAL:

Field	Video Raster Line Number Ranges	
	NTSC (5 Lines/Field)	PAL (8 Lines/Field)
Field 1	16-20	15-22
Field 2	278-282	328-335

Displaying and Preserving Vertical Blanking Information

Avid editing applications using Avid DNA hardware automatically preserve the extra lines of VBI information when you capture footage. You can choose whether to display the lines and whether to retain the lines when you output your sequence as a digital cut.

You might want to preserve the following vertical blanking information:

- Edgecode or key number information for a film project

  You might want to preserve edgecode information to easily identify the source film reel for a clip. In this case, the edgecode information would have been originally inserted during the telecine process.

- Closed-captioning information

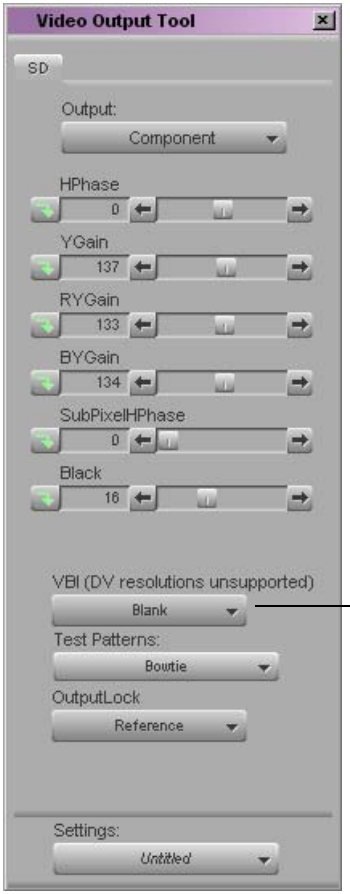
  If you are repurposing a finished sequence for another market, you might want to retain closed-captioning codes that were added after the tape was output from the Avid system. This would allow you to perform some basic editing on the recaptured sequence and not to have to reapply the closed-captioning codes afterward.

Your Avid editing application does not interpret the vertical blanking information (i.e., encoded data). It treats the coded values simply as pixels in the video frame. If you want to read the vertical blanking information during editing, you must connect an external vertical blanking information reader to the Avid system.

To display VBI information and preserve VBI information for a digital cut:

1. Select Tools > Video Output Tool.

   The Video Output tool opens.



2. Click the VBI menu and select Preserve.

If you select Blank, your Avid editing application fills the vertical blanking interval with video black (R=G=B=16).

3. Close the Video Output tool.

Any VBI information that is present in your clips or sequences will now be displayed. If you perform a digital cut, any VBI information that is in your sequence will be output.

The VBI value resets to Blank each time you launch the application. If you want to preserve VBI information on output, set the value before you perform a digital cut.

Editing a Sequence with VBI Information

After a sequence is created and output from the Avid editing system, some facilities apply VBI information to the tape to add information such as closed captioning. Often, the tape is recaptured so that the sequence can be repurposed for another market. The VBI option in the Video Output tool allows you to display the VBI information and maintain the information when you output the repurposed sequence.

Your Avid editing application uses the following rules when applying effects to material containing VBI information:

- Single track effects do not alter the VBI information. For example, if you apply a color correction effect to the sequence, the VBI lines are not affected.
- Multi-track effects such as picture-in-picture effects or 3D Warp effects use the VBI information of the track on the lowest layer. (Swap sources is ignored in the VBI area).

If you apply a multi-track effect such as a 3D Warp effect to a sequence with a single track, the VBI information will not be visible. One way to work around this problem is to create a second video track and duplicate that portion of the sequence on the second track. Then apply the 3D Warp effect to the top track. The VBI information will display on the bottom track.

- Transitions are treated as cuts in the VBI area.
- Timewarp effects copy the VBI of the input's temporally nearest field. In mild timewarp effects this may allow VBI to pass through unaltered.

You cannot add or remove VBI information from a sequence. However, you can use the Blank option to turn off the VBI display for the entire sequence.

You cannot preserve VBI information for DV resolutions. You can only preserve VBI information for JFIF, uncompressed, and MPEG IMX resolutions.

Effects of Preserving Vertical Blanking Information on Compressed Video Quality

For resolutions other than 1:1, preserving vertical blanking information when you capture can affect the video quality in the rest of the frame. For example, depending on the compression ratio, a video frame might look more blocky with vertical blanking information included.

Your Avid editing application performs the following operations when capturing a frame:

1. It captures the entire frame (including the 5 or 8 extra lines per field) as an uncompressed frame.
2. It compresses the frame if compression is selected.

The following problems may occur:

- If the frame contains vertical blanking information, the picture quality of the entire frame might be slightly degraded due to the added entropy or complexity from the vertical blanking lines.

  The higher the compression ratio, the greater the number of artifacts that might be visible. For a compression ratio of 2:1, the number of artifacts might not be noticeable at all.
- Depending on the compression ratio, the vertical blanking information itself may be distorted.

If you want to preserve vertical blanking information, either use the 1:1 (uncompressed) resolution or experiment with different compression ratios to make sure the captured footage or the vertical blanking information is not unacceptably affected by the compression.

Comparison with VBI on Meridien Systems

The following table shows the differences between how VBI is treated on systems with Meridien hardware (for example, Media Composer v12.0 or Avid Symphony v5.0) and systems with Adrenaline DNA hardware.

Vertical Blanking Information on Avid Editing Systems

Feature	Meridien	Adrenaline DNA
When does the system give you the opportunity to blank VBI information?	During capture and during a digital cut	During playback and during a digital cut
In order to view VBI on a Meridien system you must disable the 3D hardware.		
What dialog box or tool do you use to set VBI blanking?	General Settings dialog box	Video Output tool
Is VBI supported for DV resolutions?	No	No
Is VBI supported for MPEG IMX?	No	Yes
Does NewsCutter support VBI?	No	Yes
Doe NewsCutter XP support VBI?	No	No (Adrenaline only)
Is VBI supported for JFIF and uncompressed resolutions?	Yes	Yes
Is VBI information preserved when you apply effects?	Not always *For example, a color effect can modify the VBI information on a Meridien system.*	Yes (see "Editing a Sequence with VBI Information" on page 583.)
Can you use a two layer effect to wipe in VBI information?	Yes	No
Can VBI information affect compression quality?	Yes	Yes
Can compression affect VBI quality?	Yes	Yes

For details on how Meridien systems support VBI, see the white paper entitled *Preserving Information in the Vertical Blanking Interval* on the Avid Knowledge Base.

Preserving HD Closed Captioning and Ancillary Data

Your Avid editing application lets you capture closed-captioning and other ancillary data in HD media and preserve this data throughout the editing and output processes. The following information is preserved:

- Closed Captioning (CEA 608, CEA 708): Closed capturing ancillary data packets are captured from the HD-SDI source according to the SMPTE 334M standard.
- Program Description (DTV): DTV ancillary data packets are captured from the HD-SDI source according to the SMPTE 334M standard.
- Ancillary Time Code: Ancillary time code packets are captured from the HD-SDI source.

These packets are transferred in the HD-SDI data stream, unlike SD closed captioning, which is transferred in the VBI (vertical blanking interval).

To enable capture of HD ancillary data:

1. Select Tools >Console.
2. Enter the following command:

   ```
   EmbedDNXCC
   ```

This console command is persistent: it remains active until you disable it by entering the command again.

HD ancillary data is preserved only when playing a clip or sequence at full quality, and in cuts-only sequences. Other actions will make the ancillary data unusable and prevent it from being preserved.

The following tasks prevent the ancillary data from being preserved:

- Playing back clips in draft quality or best performance quality.
- Adding or rendering effects.
- Transcoding media.
- Downconverting HD media (SD downconverts do not preserve closed captioning).
- Cross-converting HD media.
- Outputting through the DVI port of the Adrenaline. Output must be through the HD-SDI port.

You can play HD media that contains ancillary data in the following applications:

- Media Composer Adrenaline v2.2.2 or later
- NewsCutter Adrenaline and NewsCutter XP v6.2.2 or later
- Avid Xpress Pro v5.2.2 or later
- Symphony Nitris v1.0.1 or later

Earlier versions of these applications cannot play HD media that contains ancillary data. The application displays an error message if you try to play this media.

Although you can play clips in these applications, ancillary data is preserved on output only through the HD-SDI port of the Adrenaline hardware connected to a system running Media Composer 2.5 or later.

Chapter 17

MultiCamera Editing

The Avid MultiCamera editing features allow you to incorporate multiple camera angle sources into the nonlinear editing process. Techniques for using these features are described in the following topics:

- Understanding Grouping and Multigrouping Clips
- Creating Group Clips
- Creating Multigroup Clips
- MultiCamera Displays
- MultiCamera Editing Techniques
- Selective Camera Cutting

Understanding Grouping and Multigrouping Clips

The grouping and multigrouping procedures gather selected clips into a single unique clip. Both procedures allow you to use special MultiCamera editing features, such as multi-split views in MultiCamera mode.

The differences between the two procedures are summarized as follows:

- Grouping creates a separate group clip out of a single set of master clips, from the IN point to the OUT point of the longest clip. Multigrouping takes the Group function one step further, literally stringing numerous sequential groups into a rough sequence. For this reason, multigroups are also known as *sequence clips*.
- The Group function allows you to sync clips based on common source timecode, auxiliary timecode, or marks placed in the footage. Because of the need for complete accuracy in sorting and grouping the clips, multigrouping is performed on the basis of common source timecode only.

- The MultiGroup function is designed primarily for situation comedies and similar productions that record multiple takes sequentially on the same source tapes. Multigrouping does not provide any benefit when you edit with clips that do not share common timecode or were not recorded sequentially, and might even cause the wrong clips to be grouped together.
- Because the Group function allows you to sync the clips based on customized IN points or OUT points, you can group any collection of clips for quick cutting of montage sequences or music-video sequences.

Creating Group Clips

In addition to the multicamera context, you can use grouped clips in other situations. Unlike multigrouping, which requires clips with matching source timecode, you can group clips that were shot at different times, on different days, and on completely different source tapes. This means that you can use group clips to:

- Create montage sequences quickly with fast-cutting between unrelated clips.
- Sync and edit an audio track (music, for example) with two or more video tracks, useful in music-video editing.
- Isolate each take as a group for multicamera editing and edit selectively, rather than build a larger sequence clip.
- Group selected portions of multicamera clips using carefully synchronized marks.

The last two options are generally used in smaller multicamera projects. Sorting, marking, selecting, and grouping individual takes of a larger project can be very time-consuming.

To create a group clip:

1. If you are using a sync point, load the clips and mark an IN point at the sync point at the start of each clip, or mark an OUT point at the sync point at the end of each clip.

For multicamera video or film shoots, you typically use a slate for marking IN and OUT points; however, you can use any visual or aural event that is recorded by all cameras simultaneously.

2. In the bin, select all the clips you want to group.
3. Select Bin > Group Clips.

   The Group Clips dialog box opens.
4. Select an option, based on the following:

Option	Description
Film TC/Sound TC	Use this option if you are syncing clips with matching film and sound timecode recorded in the field. This option appears dimmed if you are not working in a 24p or 25p project.
Inpoints	Use this option if you are syncing according to IN points set in each clip.
Outpoints	Use this option if you are syncing according to OUT points set in each clip.
Source Timecode	Use this option if the clips have matching timecode.
Auxiliary TC1–TC5	Use this option if the clips have matching timecode in the same Auxiliary Timecode column. Select an Auxiliary TC, 1 through 5, from the menu.
INK Number	Use this option if the clips have matching ink numbers. This option appears only with 24p and 25p projects.
Auxiliary Ink	Use this option if the clips have matching ink numbers in the same Auxiliary Ink column. This option appears only with 24p and 25p projects.

5. Click OK.

   A group clip appears in the bin, with the name of the first clip in the group, followed by the file name extension Grp.*n*.

   The *n* is the incremental number of group clips with the same name in the same bin. You might want to rename them for easier reading, such as *name.*Group.

Creating Multigroup Clips

Multigrouping is strictly for use in large multicamera productions, such as situation comedies, in which all synchronous camera shots are recorded with the same timecode. The MultiGroup function is a single Bin menu command that eliminates the time-consuming steps of collecting, sorting, grouping, and assembling large volumes of multicamera clips.

To multigroup your material:

1. Sort the clips by name in the bin.
2. Select Edit > Select All to select the master clips.
3. Select Bin > MultiGroup.

   The Sync Selection dialog box opens.
4. Select an option, based on the following:

Option	Description
Film TC/Sound TC	Use this option if you are syncing clips with matching film and sound timecode recorded in the field. This option appears dimmed if you are not working in a 24p or 25p project.
Inpoints	Use this option if you are syncing according to IN points set in each clip.
Outpoints	Use this option if you are syncing according to OUT points set in each clip.
Source Timecode	Use this option if the clips have matching timecode.
Auxiliary TC1–TC5	Use this option if the clips have matching timecode in the same Auxiliary Timecode column. Select an Auxiliary TC, 1 through 5, from the menu.
INK Number	Use this option if the clips have matching ink numbers. This option appears only with 24p and 25p projects.

Option	Description
Auxiliary Ink	Use this option if the clips have matching ink numbers in the same Auxiliary Ink column. This option appears only with 24p and 25p projects.

5. Click OK.

   Your Avid editing application creates several group clips for each take in the bin, and then creates a multigroup clip from the groups. The multigroup clip has the same icon as the group clips, but the icon is preceded by a plus sign.

MultiCamera Displays

There are several displays that allow you to view and edit with multiple camera angles. You can edit with either group clips or multigroup clips in all of the displays.

- **Full-Monitor Display**—The Source monitor displays a single frame from one clip in the group clip. You can view each angle in full-monitor size as you edit. Editing with this display is similar to editing in Source/Record mode.

- **Quad Split Source View**—This display allows you to view four different camera angles of a group clip in the Source monitor. The Quad Split button switches the Source monitor from Full-Monitor display to Quad Split Source view. The Record monitor and Source monitor are not synchronized in Quad Split Source view.

- **Nine Split Source View**—This display allows you to view nine different camera angles of a group clip in the Source monitor. The Nine Split button switches the Source monitor from Full-Monitor display to the Nine Split Source view. The Record monitor and Source monitor are not synchronized in Nine Split Source view.

  You can switch the Nine Split Source view from one bank of nine camera angles to a second bank of nine camera angles by using the Swap Cam Bank or Quad Split button.

- **MultiCamera Mode: MultiCamera Quad Split Edit and MultiCamera Nine Split Edit—**After you create a sequence that includes group clips, you can display the sequence in MultiCamera mode. MultiCamera mode is similar to Quad Split Source view or Nine Split Source view, except that it gangs the Source and Record monitors under one set of controls. All camera angles displayed in the Source monitor are synchronized and update when stopped or scrubbing through the timeline.

Full-Monitor Display

When you first load a grouped or multigrouped clip, the Source monitor displays a single frame from one clip in the group in Source/Record mode. This is called Full-Monitor display when working with group clips because you can view each angle in full-monitor size as you edit.

The basic features of Full-Monitor display are as follows:

- Provides *source-oriented* control of multicamera material. You can switch camera angles, cue, and mark material without affecting the sequence.
- Provides the same Source monitor controls that are available when you edit other clips in Source/Record mode.
- Provides the same MultiCamera editing features that are available in Quad Split Source view, Nine Split Source view, and MultiCamera mode. These features are described in "MultiCamera Editing Techniques" on page 601. The only difference is that in Full-Monitor display, you can view each angle as full size while you edit.

Quad Split Source View

After loading a group clip into the Source monitor, you enter Quad Split Source view by clicking the Quad Split button located in the Command palette in the MCam tab. The Source monitor splits into four camera angles of the group clip. A Group Menu icon appears in the second row of information above the Source and Record monitors.

The basic features of Quad Split Source view are as follows:

- Provides *source-oriented* control of multicamera material. You can switch camera angles, play back (one camera angle at a time), cue, and mark material without affecting the sequence.
- Provides the same Source monitor controls that are available when you edit other clips in Source/Record mode.
- Provides the special MultiCamera editing features that are available in Full-Monitor display, Nine Split Source view, and MultiCamera mode. These features are described in "MultiCamera Editing Techniques" on page 601.
- Provides a list of all group clip video and audio tracks in the Group menu for custom selection and patching.
- Allows you to use the Quad Split button to switch the Source monitor between Full-Monitor display and Quad Split Source viewing and editing modes (editing functions are the same in both displays).

- Allows you to use the Swap Cam Bank button to switch the Quad Split Source view from one bank of four camera angles to another bank of four camera angles. The Multi-angle View menus allow you to change the camera angles of the split displays.
- Does not gang the Record monitor with Quad Split Source view.

Nine Split Source View

After loading a group clip into the Source monitor, you enter Nine Split Source view by clicking the Nine Split button located in the Command palette in the MCam tab. The Source monitor splits into nine camera angles of the group clip. A Group Menu icon appears in the second row of information above the Source and Record monitors.

The basic features of Nine Split Source view are as follows:

- Provides *source-oriented* control of multicamera material. You can switch camera angles, play back (one camera angle at a time), cue, and mark material without affecting the sequence.
- Provides the same Source monitor controls that are available when you edit other clips in Source/Record mode.
- Provides the special MultiCamera editing features that are available in Full-Monitor display, Quad Split Source view, and MultiCamera mode. These features are described in “MultiCamera Editing Techniques” on page 601.
- Provides a list of all group clip video and audio tracks in the Group menu for custom selection and patching.
- Allows you to use the Nine Split button to switch the Source monitor between Full-Monitor display and Nine Split Source viewing and editing modes (editing functions are the same in both displays).

- Allows you to use the Swap Cam Bank button to switch the Nine Split Source view from one bank of nine camera angles to another bank of nine camera angles. The Multi-angle View menus allow you to change the camera angles of the split displays.
- Does not gang the Record monitor with Nine Split Source view.

MultiCamera Mode

After loading a group clip into the Source monitor and editing it to create a new sequence, select MultiCamera Mode from the Special menu to activate the features. The MultiCamera Quad Split Edit or MultiCamera Nine Split Edit is displayed, depending on whether you were in Quad Split Source view or Nine Split Source view before entering MultiCamera mode.

You can also enter MultiCamera mode by clicking the Quad Split button or the Nine Split button if you have previously mapped the button to one of the toolbars in the Timeline or the Source/Record monitor.

MultiCamera mode takes the Nine Split Source view and Quad Split Source view one step further: it gangs all clips in the group clip displayed in the Source monitor with the sequence displayed in the Record monitor. All clips are synchronized and continuously updated during playback and editing.

You see the best real-time playback performance when you play material that was recorded at 10:1m, 4:1m, or 1:1 resolutions. Also, you see better performance when you play in Best Performance mode rather than in Full Quality mode. For more information about these modes, see "Playing Back at Different Video Qualities" in the Help.

When you play back multicamera material, you can cut by using the MultiCam keys to select different camera angles when stopped. The camera angles you selected with the MultiCam keys are recorded as cuts in the Timeline and are displayed in the Record monitor.

The basic features of MultiCamera mode are as follows:

- Provides *sequence-oriented* control of multicamera material, in contrast to Full-Monitor display, Nine Split Source view, and Quad Split Source view. Whenever you play back, cue, switch camera angles, or mark material, your changes occur in the sequence.
- Synchronizes all camera angles displayed in the Source monitor and continuously updates during playback and editing.

- Lets you perform live bank swaps while playing in MultiCamera Quad Split Edit mode by using the Swap Cam Bank button.
- Provides only Record monitor controls.
- Provides special MultiCamera editing features that are available in Full-Monitor display, Quad Split Source view, and Nine Split Source view. These features are described in "MultiCamera Editing Techniques" on page 601.
- Allows you to cut between clips as you would during live switching of a show.
- Provides a list of all group clip video and audio tracks in the Group menu for custom selection and patching.
- Lets you deselect MultiCamera Mode in the Special menu at any time to switch between source-oriented and sequence-oriented MultiCamera editing.
- Lets you switch between singular and multi-angle playback without exiting MultiCamera mode.

Real-time Playback in MultiCamera Mode

You can use the Video Quality options to achieve better real-time playback performance in SD projects when you display multiple views (Quad Split Source view or Nine Split Source) in MultiCamera Mode. In HD projects, the Best Performance Video Quality option is the only option available for multiple views in MultiCamera Mode. For more information on the Video Quality menu, see “Optimizing Your Playback Performance” in the Help.

Your Avid editing application remembers your most recent Video Quality setting for multicamera or group clips separately from your most recent Video Quality setting for normal clips, and automatically switches to the appropriate setting when you open or close clips in monitors.

For example, you might be working with group clips and set the Video Quality menu to Best Performance, then close all group clips and work with single clips. When you reopen a group clip in a monitor, your Avid editing application remembers your last group clip setting and switches to Best Performance, regardless of the video quality you were using for single clips.

Whenever you have a multicamera or group clip open in a monitor, your Avid editing application uses the Video Quality setting for multicamera or group clips, even if the clips you are currently playing are single clips. To change the Video Quality setting, you can make a new selection from the Video Quality menu, or you can close all multicamera or group clips to revert to your most recent Video Quality setting for single clips.

Limitations on Playback of MultiCamera Media

To play back a group clip or a multigroup clip, you must be in MultiCamera mode. In addition, the following limitations apply to playback performance for standard-definition projects and high-definition projects:

- In an HD project, playback in any of the multicamera displays uses the Best Performance mode for video quality. For information on Best Performance mode, see “Playing Effects Back at Different Video Qualities” in the Help.
- In an SD project, you must have an Avid DNA device attached to your system in order to view multicamera display in a client monitor during a digital cut. Alternatively, you can view multicamera display using Full Screen Playback.
- In an HD project, you cannot play back a multicamera sequence to the client monitor. To view multicamera playback, use Full Screen Playback.

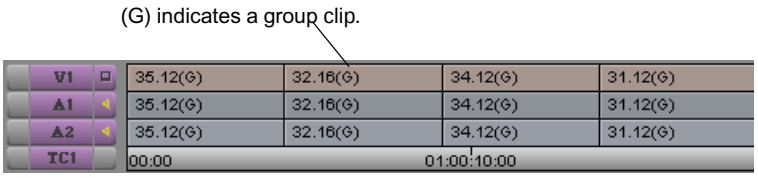
  For more information on full screen playback, see “PLaying Video to a Full-Screen Monitor” in the Help.

- In an SD project, multicamera editing works only with 8-bit resolutions. If you use media with a 10-bit resolution, your Avid editing application automatically plays the media at the appropriate 8-bit resolution.

MultiCamera Editing Techniques

When you load a group or multigroup clip into the Source monitor and begin editing, the Timeline adds a unique identifier to indicate the presence of a group.

The system uses the name of the clip within the group to identify the clip in each cut, and adds a G in parentheses to indicate the group.



Using various keys and functions, you can switch and edit the displayed group clip at any point in the sequence. These techniques apply to both group and multigroup clips.

Switching Clips with the Arrow Keys

You can switch the display of camera angles by using the Previous In Group button and the Next In Group button. These buttons are mapped by default to the Up Arrow and Down Arrow keys. The angle selection switches in either the Source monitor (source material) or in the Record monitor (sequence material), whichever is active.

If the group contains more camera angles than the multi-split display, the Up Arrow and Down Arrow keys cycle through all the clips. Only the first four clips are shown in the Quad Split display and only the first nine clips are shown in the Nine Split display.

When the Record monitor is active, you can place the position indicator within any segment and use the arrow keys to switch the group clip selected for that segment.

Whenever you switch camera angles, you also switch the frame representing the group in the bin. You can use this method to change the representative frame for bin display and storyboarding.

Editing and Playing Back a Linecut in MultiCamera Mode

You can edit and play back a linecut (playback of the edited sequence) on the Source monitor while in Quad Split Source view and Nine Split Source view. The client monitor also plays the linecut.

The client monitor displays only SD multicamera sequences. You can view playback of HD multicamera sequences in the Source monitor only.

If you notice frames are dropping during playback, decrease the size of the Composer window until playback becomes smooth.

To play a linecut on the client monitor in MultiCamera mode:

1. Double-click Composer in the Settings list of the Project window.

   The Composer Settings dialog box opens.
2. Click the MultiCam tab.
3. Click the Split Mode Play menu, and select Quad or Nine Split.
4. Click the MultiCam Mode Client Monitor menu, and select Linecut.
5. Click OK.

Using the Add Edit Button

You can use the Add Edit button like a hot key to add edits while stepping through a sequence during playback. The only difference is that you are not switching camera angles until *after* you set the edit points.

This method is especially useful when editing to music because it allows you to concentrate on the beats and ignore camera angles until the edits are placed.

To use this method, you must first map the Add Edit button onto the keyboard. Consider mapping the Add Edit button to a function key next to the default MultiCam keys. For more information on mapping keys, see “Understanding Button Mapping” on page 80.

To add edits:

1. Load the group or multigroup clip into the Source monitor and splice it into a sequence.
2. Play the sequence. Each time you want to make an edit, stop and press the Add Edit key. The edits appear in the Timeline.

   Play the sequence repeatedly to add more edits, or remove edits in Trim mode by lassoing them in the Timeline and pressing the Delete key.
3. After adding the edits, place the position indicator within each segment and use the arrow keys to switch camera angles.

Using the Group Menu

The Group menu allows you to select video or audio channels from any of the clips in the group and patch to the tracks available in the sequence. You can have nine camera angles and nine or more audio tracks synchronized and available for patching at any time.

Click the Group Menu icon to display the menu.

Select the Second Row of Info option in the Composer Settings dialog box for the Group Menu icon to be displayed above the Source monitor.

In addition, you can select the Audio Follow Video option from the Group menu to instruct the system to switch both audio and video for each camera angle or selective camera style. The Group Menu icon changes to green when you select the Audio Follow Video option.

Audio Follow Video overrides the track selection beside the Timeline and switches audio in track A1 only. Audio-Follow-Video edits appear in the Timeline as match frames (that is, the transition contains an equal sign).

To use the Group menu:

1. Click the Group Menu icon in the second row of information above the Source monitor to display the Group menu.
2. Select video or audio channels from any clip in the group to patch the video or audio channels to the tracks available in the sequence.
3. (Option) Select the Audio Follow Video option to switch both audio and video for each camera angle when you cut.

Using the Multi-angle View Menus

You can use the Multi-angle View menus to group up to 18 clips at a time, and select additional clips to be shown in any of the multi-split displays in the Source monitor. You can also select Sequence from the Multi-angle View menus to display the entire sequence.

To select an additional clip from the group to appear in one of the multi-split displays:

1. Press the Ctrl key to activate the display of clip names in the multi-split displays.
2. Ctrl+click the multi-split display where you want to show the new clip.

   The clips in the group are listed in the Multi-angle View menu.

3. Select the clip you want to display from the Multi-angle View menu.

   The new clip appears in the multi-split display.

Using Match Frame in MultiCamera Editing

You can use the Match Frame button to display the matching clip within the group when match framing from the sequence, or you can display the original clip when match framing from the source group. For more information on using the Match Frame feature, see “Using Match Frame” in the Help.

If the group contains more clips than are displayed and you match a clip that is not visible (for example, clip 5 and above for the Quad Split display), your Avid editing application selects the clip but does not display it.

Selective Camera Cutting

Selective camera cutting involves marking and editing source material into the sequence, much as you build a sequence by using nongrouped clips in a normal session. You can play, cue, and mark clips on the source side, and then splice, overwrite, and trim clips in the sequence.

Perform selective camera cutting in one of the following ways:

- Lay down an entire group as a master sequence, and then add edits, switch camera angles, and trim within the sequence or cut in new clips.
- Edit one clip at a time without laying down a master sequence first, effectively building a sequence as you would with single-camera material.

The advantage of selective camera cutting with grouped clips is that all the clips are synchronized, which simplifies the selection of camera angles. Selective camera cutting generally requires the use of a detailed line script or detailed notes that enable you to select clips and assemble the sequence one clip at a time.

To perform selective camera cutting:

1. Load the group or multigroup clip into the Source monitor.
2. Using timecode notes and the numeric keypad, type the timecode for the first take to begin the sequence, and press Enter (Windows) or Return (Macintosh) to cue the clip in the Source monitor to the take.
3. Mark IN and OUT points for the entire scene.
4. Select a camera angle for the first clip, and then splice the entire scene into a sequence.
5. Use the arrow keys, the Add Edit button, or both to select edit points and switch to different angles throughout the master scene in the sequence.
6. To replace a portion of the take with a part from another take, use the timecode notes again to cue the take, set marks, and perform a replace edit.
7. When you are finished with a scene, repeat the procedure for each additional scene in the sequence.

Chapter 18
Using Settings

The Settings list is displayed when you click the Settings tab of the Project window. If you select a setting in the Settings list and make changes, the new parameters remain the default settings until you change them again. To view or modify the parameters, double-click the setting.

For information on using the Settings window, see “Using the Settings List” on page 609. For information on each of the settings, see the following topics:

- Audio Settings
- Audio Project Settings
- Bin Settings
- Capture Settings
- Communication (Serial) Ports Tool Settings
- Composer Settings
- Controller Settings
- Correction Settings
- Deck Configuration Settings
- Deck Preferences Settings
- Effect Editor Settings
- Export Settings
- Film and 24P Settings
- Full Screen Playback Settings
- General Settings
- Grid Settings
- Import Settings
- Interface Settings
- Interplay Folder Settings

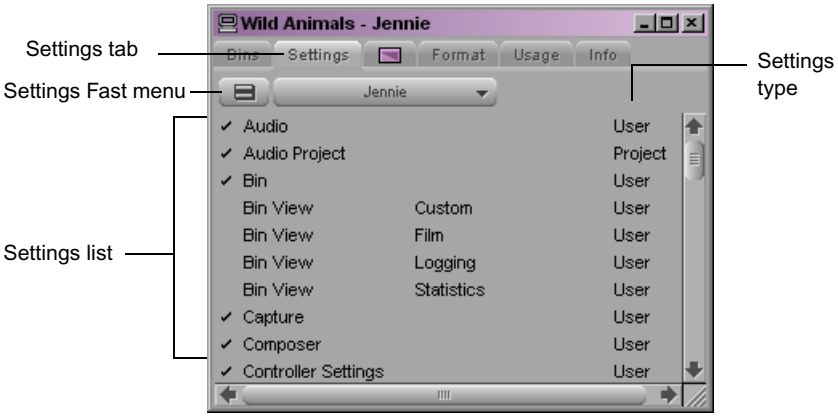
- Interplay Server Settings
- Interplay User Settings
- Keyboard Settings
- Marquee Title Settings
- Media Creation Settings
- Media Services Settings (Windows Only)
- Mouse Settings
- PortServer Settings
- Remote Play and Capture Settings
- Render Settings
- Safe Colors Settings
- Script Settings
- Sound Card Configuration Settings (Windows Only)
- Timeline Settings
- Trim Settings
- Video Display Settings
- Video Input Tool Settings
- Video Output Tool Settings
- Workspace Settings

Using the Settings List

From the Settings list in the Project window, you can view, select, open, and alter various User, Project, and Site settings.

To view the Settings list:

- Click the Settings tab in the Project window.



Understanding Settings

Three types of settings appear in the Settings list in the Project window, as indicated in the third column of information: User, Project, and Site.

For information about the location of the settings files, see "Using the Avid Projects and Avid Users Folders" in the Help.

- **User settings** are specific to a particular editor. User settings reflect individual preferences for adjusting the user interface in your Avid editing application. Individual User settings are stored in each user folder.
- **Project settings** are directly related to individual projects. When you change a Project setting, it affects all editors working on the project. Specific Project settings are stored in each project folder. Project folders are stored in the following locations, which depend on whether your project is private or shared:

Default Locations of Avid Projects Folders

	Private Projects	Shared Projects
Windows	C:\Documents and Settings*Windows login name*\My Documents\Avid Projects	C:\Documents and Settings\All Users\Shared Documents\Shared Avid Projects
Macintosh	Macintosh HD/Users/*Mac login name*/Documents/Avid Projects	Macintosh HD/Users/Shared/*Avid Application*/Shared Avid Projects

- **Site settings** establish default parameters for all new users and projects on a particular system. They can apply to particular configurations of equipment installed at the site (for example, specification and node settings for an external switcher). They can also include other User or Project settings that you copy into the Site Settings window. Site settings are stored in a separate Settings folder. See "Using Site Settings" on page 622.

For information about navigating in the Settings dialog boxes, see "Navigating in Dialog Boxes and Menus" in the Help.

The following table briefly describes each item in the Settings list and where you can find additional information on a particular item.

Settings List

Setting Name	Description	For More Information
Audio	Sets the default audio pan; contains audio scrub options.	See "Audio Settings" on page 625, and "Adjusting Clip Gain and Pan Values" and Adjusting Digital Scrub Parameters in the Help.
Audio Project	Defines the audio settings for the project and defines the audio input and output methods.	See "Audio Project Settings" on page 626.
Bin	Sets the auto-save interval, double-click preferences for bins, edit clips from bins parameters, and enables SuperBins.	See "Bin Settings" on page 635.
Bin View	Selects and formats the information displayed in bins.	See "Displaying Custom Bin Views" on page 212.
Capture	Defines how the Avid system captures and batch captures in specific situations.	See "Capture Settings" on page 636.
Communication (Serial) Ports	Sets a port for Remote Play and Capture.	See "Remote Play, Capture, and Punch-In" on page 170.
Composer	Configures the display and behavior of buttons and information in the Playback, Source, and Record monitors.	See "Composer Settings" on page 643.
Controller Settings	Sets the default controller, port selection, and custom controller buttons.	See "Controller Settings" on page 649.
Correction	Sets the parameters for the Color Correction tool.	See "Correction Settings" on page 650 and the *Avid Color Correction User's Guide*.
Deck Configuration	Configures channels and decks into the system.	See "Deck Configuration Settings" on page 652.
Deck Preferences	Sets preferences that affect all decks configured into the system.	See "Deck Preferences Settings" on page 654.
Dynamic Relink	Sets parameters that determine to which media files your clips should be linked when you are working in a MultiRez environment.	See "Dynamic Relink Settings" on page 604.
Effect Editor	Changes effect parameters by adjusting the appearance and operation of effects.	See "Effect Editor Settings" on page 655.

Settings List (Continued)

Setting Name	Description	For More Information
Export	Sets parameters for file export.	See "Export Settings" on page 657.
Film and 24p	Sets parameters for edit play rate, ink number format, and transfer rate.	See "Film and 24P Settings" on page 687.
Full-Screen Playback	Sets parameters for viewing your video on a full-screen monitor.	See "Full Screen Playback Settings" on page 689.
General	Defines default values such as the default starting timecode and temporary file location for your project.	See "General Settings" on page 690.
Grid	Defines the grid to use when you create effects.	See "Grid Settings" on page 691 and "Setting the Effect Grid Options" in the Help.
Import	Sets parameters for file import.	See "Import Settings" on page 694.
Interface	Defines the appearance and function of certain interface elements.	See "Interface Settings" on page 703 and "Customizing the Appearance of the Avid User Interface" on page 56.
Interplay Folder	Allows you to specify a project directory on the asset manager to use for checking in media objects.	See "Interplay Folder Settings" on page 705 and the *Avid Interplay Installation Guide*.
Interplay Server	Allows you to specify the Avid Interplay Server location on the network.	See "Interplay Folder Settings" on page 705 and the *Avid Interplay Installation Guide*.
Interplay User	Allows you to set the preference for accessing Avid asset manager.	See "Interplay User Settings" on page 706 and the *Avid Interplay Installation Guide.*
Keyboard	Used to map commands from the Command palette to the keyboard.	See "Keyboard Settings" on page 707 and "Using the Keyboard" in the Help.
Marquee Title	Allows you to select the Title tool for creating titles and provides options for promoting titles.	See "Marquee Title Settings" on page 708 and the *Avid Marquee Title Tool User's Guide.*
Media Creation	Sets parameters for video resolution and selects the drives for capturing, creating titles, importing, performing audio and video mixdown, and motion effects.	See "Media Creation Settings" on page 709.

Settings List (Continued)

Setting Name	Description	For More Information
Media Services	Configures your Avid editing application to work with the Avid Interplay Media Services Broker.	See "Media Services Settings (Windows Only)" on page 713 and the *Avid Interplay Media Services Setup and User's Guide*.
Mouse	Allows you to set the speed of scrolling with the mouse wheel within the editing application.	See "Mouse Settings" on page 714 and Mouse Scroll Wheel Support" in the Help.
PortServer	Sets up the LANshare client so its workspaces are recognized.	See "PortServer Settings" on page 714.
Remote Play and Capture	Lets you use your editing application like a videotape recorder.	See "Remote Play and Capture Settings" on page 715 and "Remote Play, Capture, and Punch-In" on page 170.
Render	Controls the size of imported graphics and rendered effects to ensure that the graphic or effect will be playable.	See "Render Settings" on page 716 and "Creating and Using Render Settings" in the Help.
Safe Colors	Sets the safe color parameters for the Color Correction tool.	See "Safe Colors" in the Help.
Script	Sets the default display options for scripts imported using script integration.	See "Script Settings" on page 721.
Sound Card Configuration (Windows only)	Allows you to map audio input sources directly to the output sources available with your audio hardware	See "Sound Card Configuration Settings" on page 1525.
Timecode Window	Displays various timecodes in an adjustable window. Appears in the Settings list to facilitate copying settings.	See "Displaying Timecode in the Timecode Window" on page 327.
Timeline	Contains general Timeline preferences.	See "Timeline Settings" on page 723.
Trim	Customizes the Trim mode environment.	See "Trim Settings" on page 725.
Video Display	Allows digital camera video input; enables support of cameras with video input; sets the mode and source for desktop video; enables Client monitor; sets effects preview options.	See "Video Display Settings" on page 726.

Settings List (Continued)

Setting Name	Description	For More Information
Video Input	Opens the Video Input tool.	See “Video Input Tool Settings” on page 728 and “Preparing for Video Input” in the Help.
Video Output	Opens the Video Output tool.	See “Video Output Tool Settings” on page 729 and “Selecting a Video Output Signal” in the Help.
Workspace	Allows you to associate settings and windows with a workspace.	See “Workspace Settings” on page 734 and “Linking User Settings and Workspaces” on page 64.

Defining Settings

You can use the Settings list to establish a hierarchy of settings that address the specific needs of each production phase.

For example, you can establish:

- **User settings for the assistant editor:** Facilitate logging, capturing, and organizing projects
- **User settings for the editor:** Include editing interface preferences
- **Project settings:** Reflect the specific needs of the project
- **Bin View settings:** Display useful columns of information for each of the bins described in “Managing Folders and Bins” on page 45

Never use a user settings file that was opened in the MediaLog™ application.

By establishing these settings once, and selecting the appropriate setting or bin view in context, you can save time and effort that would be spent searching for information or adjusting bin headings on-the-fly. You can also save these settings along with your template for use on similar projects, as described in “Managing Folders and Bins” on page 45.

For information on some of the most commonly-used system settings, see the following topics in the Help: “Bin Settings,” “Film and 24p Settings,” “General Settings,” and “Interface Settings.”

To view the settings:

- Double-click each setting in the Settings list in the Project window.

Displaying Project Settings

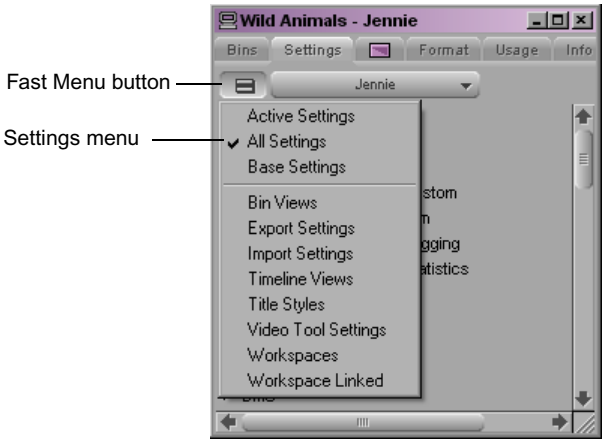
You can display the Settings list in the Project window in different groups, depending on what you need to view.

To change the Settings list display in the Project window:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click the Fast Menu button, and select a settings display group from the Settings menu.



The selected settings group has a check mark in the Settings menu, and the Settings list displays only the settings in that group.

The following table describes the different Settings display groups.

Settings Display Groups

Option	Description
Active Settings	Displays currently active settings
All Settings	Displays all settings available
Base Settings	Displays Project, User, and Site settings only; no views are displayed
Bin Views	Displays all the Bin View settings you created
Export Settings	Displays all the Export settings
Import Settings	Displays all the Import settings
Timeline Views	Displays all the Timeline View settings you created

Settings Display Groups (Continued)

Option	Description
Title Styles	Displays all the templates you created for the Title tool
Video Tools Settings	Displays the Video Input Tool and Video Output Tool settings only
Workspaces	Displays all the Workspace settings you created
Workspace Linked	Displays only the linked workspaces

Working with Settings

You can view and modify most of your current settings by double-clicking them in the Settings list of the Project window and by selecting new options. You can duplicate, rename, copy, and move settings among files or systems.

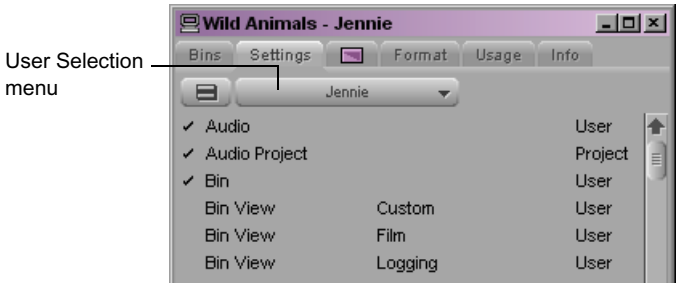
Selecting Another User

Because User settings are not project or site specific, you can display another set of User settings in the Project window.

To select another user:

1. Click the Settings tab in the Project window.

   The Settings list appears.



2. Click the User Selection menu, and select another name.

The previous user's settings are saved, and the new user's settings are loaded into your Avid editing application and the Project window.

Modifying Settings

You can alter the default options for various settings to reflect the specific needs of a project or to customize your Avid editing application based on personal preferences.

You cannot modify the following types of settings:

- Settings that require the presence of standalone peripherals
- Settings that are only modifiable from within the tools in which they are used, such as Timeline views
- Film and 24p settings when you are working in nonfilm projects

To modify available settings:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Double-click the name of a setting.

   A dialog box or window opens.

3. Type new values or select new options for the setting.
4. Click OK, Save, Apply, or Cancel, or click the Close button.

   The system saves changes in the appropriate User, Project, or Site settings file.

Working with Multiple Settings

You can have multiple versions of settings in your Settings list in the Project window that apply to several users at various stages of production.

For example, you can have:

- **Two Bin settings** — one that automatically saves more often when you are editing intensively, and one that automatically saves less often when you are doing organizational work in the bins
- **Multiple Capture settings** for capturing various types of source material
- **Multiple Keyboard and Composer settings** to use for various activities such as capturing, offline editing, or online effects editing
- **Multiple Deck Preferences settings** for various types of capturing or for output

Duplicating Settings

To create a new version of a setting:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click the setting you want to copy. Ctrl+click (Windows) or Shift+click (Macintosh) any additional settings you want to copy.

3. Select Edit > Duplicate.

   A copy of each selected setting appears in the Settings list.

If you are duplicating settings with custom setting names, a period followed by a version number appears at the end of the custom setting name of the duplicated settings.

4. Name your settings to indicate their functions. See "Naming Settings" on page 618.

Naming Settings

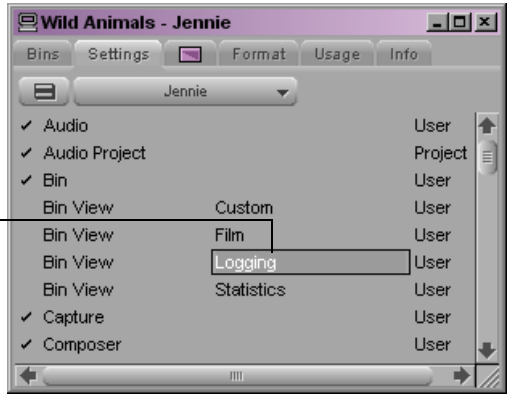
You can give settings custom names to differentiate among copies or to indicate a specific use.

To enter a custom setting name:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click the Custom setting name column located to the right of the setting name.



3. Type a name, and press Enter (Windows) or Return (Macintosh).

   The new name appears in the list and is saved in the settings file.

Selecting Among Multiple Settings

With multiple settings, only one setting at a time is active. Settings that are currently active have a check mark to the left of the setting name.

To change the active setting:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click in the space to the left of the setting that you want to select as the active setting.

Deleting Settings

You can delete settings from the Settings list in the Project window at any time. For example, you might choose to delete one or more versions of a particular setting, or you might want to delete all but a few settings for transfer into another Settings window.

You cannot undo a deletion. You can, however, restore the default settings or copy settings from other files, as described in "Restoring Default Settings" on page 620 and "Copying Settings Between Settings Files" on page 620.

To delete a setting:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click a setting to select it. Ctrl+click (Windows) or Shift+click (Macintosh) each additional setting you want to delete.

3. Do one of the following:

   - Press the Delete key.
   - Select Edit > Delete.

   The selected settings are removed immediately.

Restoring Default Settings

To restore settings to their default values:

1. Click the Settings tab in the Project window.

   The Settings list appears.

2. Click a setting to select it. Ctrl+click (Windows) or Shift+click (Macintosh) each additional setting you want to select.

3. Right-click the selected setting (or one of the multiple selected settings), and select Restore to Default.

   A message box opens, asking whether you want to save the settings.

4. Click Copy & Restore to copy the current settings before restoring the default settings, or click Restore to discard the current settings.

   The system restores the default values for the selected settings.

Copying Settings Between Settings Files

You can copy selected settings:

- Between existing settings files.
- Into a new settings file for use in other projects.
- To change one type of setting to another type.
- Into the Settings folder to establish standard system settings for all new projects and users. See "Using Site Settings" on page 622.

You can also transfer settings files to another Avid system.

To copy settings between setting files:

1. With the Settings list in the Project window active, open the destination settings file in one of the following ways:

   - Create and open a new settings file by selecting File > New Settings File.

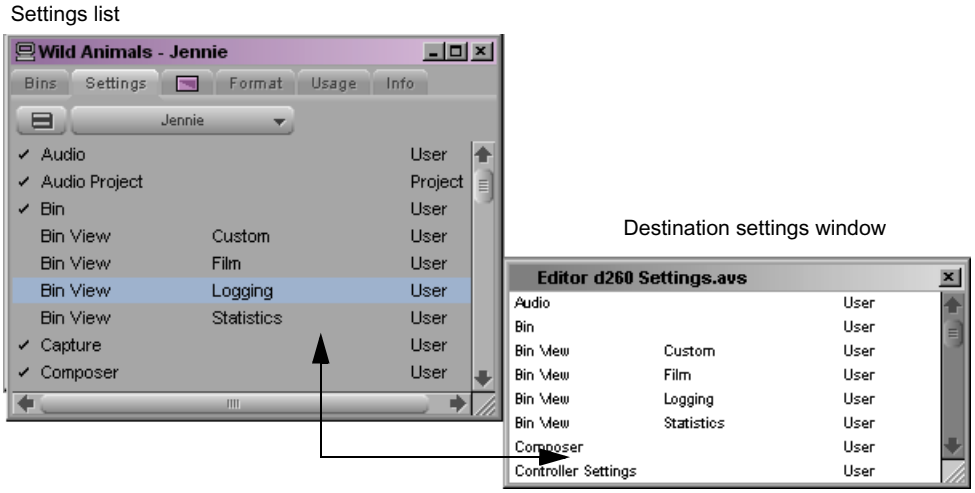
     An untitled settings file window opens.

   - Open an existing settings file by selecting File > Open Settings File, locate and select a settings file (which has the file name extension .avs), in the Avid Projects or Avid Users folder, and then click Open.

     The settings file window opens.

2. Click the setting you want to copy in the Settings list in the Project window. Ctrl+click (Windows) or Shift+click (Macintosh) any additional settings that you want to copy.

3. Drag the selected setting to the destination settings window.



The copied settings are saved when you close or save the file or project.

You can also drag settings from the settings window into the Settings list in the Project window.

To copy a setting from a settings file into the Settings list with the setting active:

1. Drag the setting into the Settings list.

   A message box opens.

2. Do one of the following

- Click Add to add the new settings to the project without affecting the project's current settings.
- Click Replace to replace the current version of each setting with the new settings. Additional versions of each setting are not affected.

Using Site Settings

When your Avid editing application opens a new project, it first searches the Site_Settings file and loads site settings and any settings placed here. The system then proceeds to load any Project and User settings not included in the Site_Settings file.

The Site_Settings file is located in the following folder:

- (Windows) *drive*:\Program Files\Avid*Avid editing application*\Settings
- (Macintosh) Macintosh HD/Applications/*Avid editing application*/ Settings

Adding settings to the site settings files is useful if you need to establish global settings for all new users and projects, such as switcher settings, a specific start timecode for all sequences, or various customized features of the interface.

To load settings into the Site_Settings file:

1. Open a project with the settings you want to establish as Site settings. If a project does not already exist with the settings you want, create a project and make adjustments to the default settings as needed.
2. Select Special > Site Settings.

   The Site_Settings window opens.
3. Click a Project or User setting in the Settings list in the Project window, or Ctrl+click (Windows) or Shift+click (Macintosh) multiple settings.
4. Drag the selected setting to the Site Settings window.

   Copies appear in the Site Settings window.
5. Close the Site Settings window.

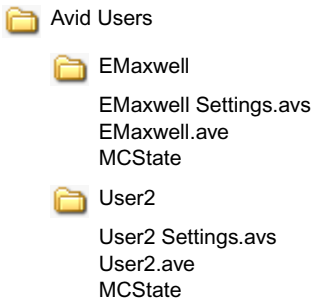
All new users and projects opened from the Select Project dialog box use these settings as the default settings.

Manipulating Settings by Importing User Profiles or Copying Files Manually

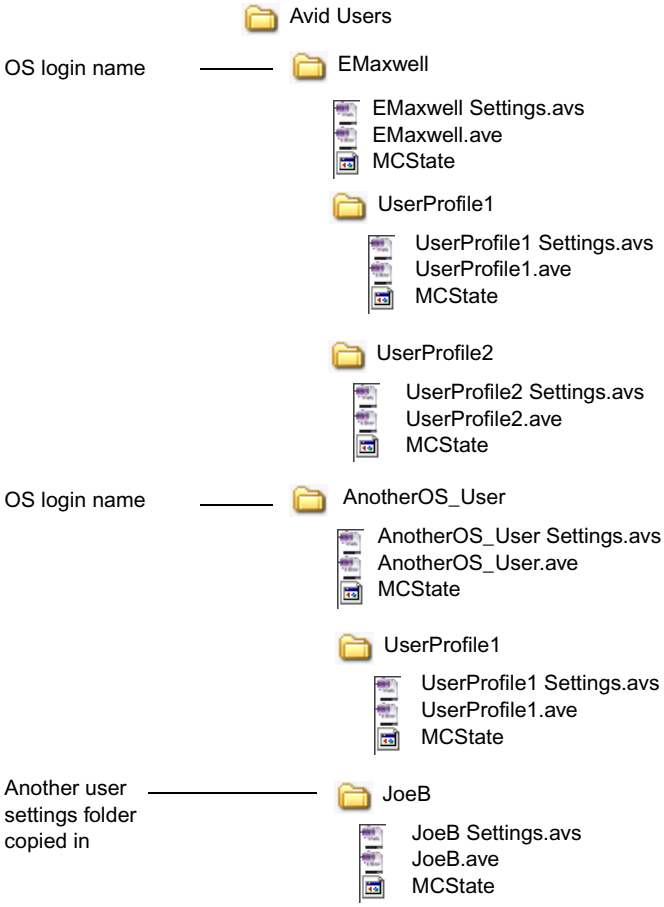
Experienced users are accustomed to going to the desktop and moving settings and project files around manually, but there is an easier and more reliable way of doing this. The User Profile menu, in the Settings tab of the Project window, has two items: Create User Profile, and Import User or User Profile. If you have another user's settings on your system or on a storage medium that you would like to use, select User Profile Menu > Import User or User Profile. This option allows you to navigate to the user folder, select it, and establish it as another user profile, accessible from the same menu. It brings all the requisite files and puts them in the right place. For more information about using and creating User Profiles, see "Working with User Profiles" on page 41.

If you choose, instead, to copy the folder, make sure you copy the entire folder, not just the individual settings files. Place the copied folder in your user folder.

A standard file structure with multiple users:



If you use the User Profile option to import User1 and User2 (turning them into User Profiles), you see something like this:



For more information about selecting projects, see “Opening and Closing a Project” in the Help.

Audio Settings

The following table describes options available in Audio Settings.

Audio Settings

Option	Description
Source Monitor Scrub	Select the number of outgoing and incoming frames you hear as you scrub.
Record Monitor Scrub	Select the number of outgoing and incoming frames you hear as you scrub.
Default Pan	Select the way you want sound to pan between speakers.
• Alternating L/R	Allows you to send the odd tracks to the left channel and send the even tracks to the right channel.
• All Tracks Centered	Centers the pan of all tracks between the two speakers for monitoring and output.
Play Buffer Size in Samples (Software-only Models)	Allows you to change the size of the host audio play buffer during playback and digital cut. Use this option if you experience performance problems with playback to the host audio device. Avid recommends that this setting be left in its default position. *Changing this parameter might cause audio or video underruns, dropped frames, or increased noise in the audio output.* For more information, see “Adjusting Buffer Size (Software-only Models)” in the Help. To return the setting to the Avid recommended default setting, click the rs (recommended sample) button.
Tool Buffer Size in Samples (Software-only Models)	Allows you to change the size of the host audio play buffer during audio loop play and audio tools play (such as automation gain record). Reducing the tools play buffer size decreases the overall latency between the time you adjust an audio parameter in your Avid editing application and the time that you hear those changes through the speaker. *Changing this parameter might cause audio or video underruns, dropped frames, or increased noise in the audio output. Since performance varies from machine to machine, you should find a setting that works best. For best results when adjusting this setting, turn off or disconnect all DV devices.* For more information, see “Adjusting Buffer Size (Software-only Models)” in the Help. To return the setting to the Avid recommended default setting, click the rs (recommended sample) button.

Audio Project Settings

The following topics describe options available in Audio Project Settings.

You can save multiple Audio Project settings and select one as the active setting. If you edit an inactive setting, your Avid editing application does not display items that are not saved. For example, Mix Mode is not displayed in an inactive setting because it can't be saved in the Project settings.

The Direct Out mode is saved in the Audio settings, not the Audio Project settings. You set it in the Output tab of the Audio Project window but the system saves the value in the active Audio settings.

Audio Projects Settings: Main Tab

The following table describes options available in the Audio Projects Settings: Main tab.

Audio Project Settings: Main Tab

Option	Suboption	Description
Sample Rate	32 kHz 44.1 kHz 48 kHz	Allows you to select audio rate settings for the entire system for playing and recording. The broadcast standard for most high-end video postproduction houses is 48 kHz. Select the rate based on the requirements of your facility. For information on changing the sample rate for individual sequences and audio clips, see "Changing the Sample Rate for Sequences and Audio Clips" in the Help.
Audio File Format	WAVE (OMF) AIFF-C (OMF) PCM (MXF)	Select the file format for the audio: • **WAVE (OMF)** is compatible with Windows applications. • **AIFF-C (OMF)** is compatible with many third-party applications, including Pro Tools. • **PCM (MXF)** enables easy exchange of material between servers, tape streamers, and digital archives. Select the WAVE or AIFF-C for all audio media when you need to transfer audio media files directly to a Pro Tools system for audio sweetening. *Media Composer has limited support for Sound Designer II™ audio. See "Working with Sound Designer II Audio Files on Macintosh Systems" in the Help.*
Sample Bit Depth	16 Bit 24 Bit	Select this option to set the sample size used when you work with audio files: • **16 Bit** is for CD-quality audio. • **24 Bit** is for work with higher resolution audio.

Audio Project Settings: Main Tab (Continued)

Option	Suboption	Description
DV Audio Pattern	Unlocked Audio Locked Audio	This option is only available for you to select from when your Avid editing application is in a software-only configuration. When an Avid DNA device is attached, this option is grayed out. The option is automatically selected for you depending on the deck template you have chosen. Unlocked audio is selected for all device templates, with the exception of DVCPro device templates, which select Locked Audio. DV Audio Pattern works with all devices. However, because some devices check the DV Audio Pattern setting before transferring or recording, you should select the DV Audio Pattern setting expected by your device. • **Unlocked Audio** allows some imprecision in the audio sample rate, with a variation of up to +/– 25 audio samples per frame. • **Locked Audio** keeps the audio clock locked precisely to the video clock, so exactly the same number of audio samples and video frames are recorded or transmitted in each cycle of the phase relationship.
Convert Sample Rates When Playing	Always Never	Allows you to choose whether or not to perform the conversion rate: • **Never** plays the segments not set at the sample rate as silence. • **Always** makes the system attempt to perform a sample rate conversion on-the-fly. Although the resulting audio quality might not be useful for a finished project, it can be useful during an editing session since it prevents audio from playing back with silence. For information on changing the sample rate for individual sequences and audio clips, see "Changing the Sample Rate for Sequences and Audio Clips" in the Help.
Show Mismatched Sample Rates as Different Color	Yes No	Allows you to identify a specific sample rate by color if you have a sequence with several different sample rates.

Audio Project Settings: Main Tab (Continued)

Option	Suboption	Description
Remove Extra Filler After Punchin	Remove Keep	Allows you to remove any extra filler added during an audio punch-in recording.
Optical Connection — available when you are using Avid Adrenaline hardware	ADAT S/PDIF	Allows you to select an output for use with an optical connection.

Audio Project Settings: Input Tab

The options that appear in this tab depend on your audio configuration and the audio hardware installed on your system. Your options might differ from those listed here.

The following table describes options available in the Audio Projects Settings: Input tab.

Audio Project Settings: Input Tab

Option	Suboption	Description
Input Gain slider — available with software-only configurations		A slider that controls your computer's volume settings. (Windows only) If you select the +20 dB check box, gain is additionally boosted.
Input Source	Input options depend on the audio hardware installed in or connected to your system.	Allows you to select the type of audio input. *If you select IEEE 1394 as your input device, the input source is automatically set to Host-1394. For more information, see "Connecting and Selecting a DV Device" in the Help.*
Passthrough Mix Tool — available when you are using Avid DNA hardware		Opens the Passthrough Mix tool, which allows you to adjust the mix of tracks for monitoring audio input.
Input Gain menu— available when you are using Avid Mojo or Avid Mojo SDI hardware		Allows you to calibrate the volume of global audio input. Select 0dB for most situations, or +6 dB in case of low gain inputs.

Audio Project Settings: Output Tab

The options that appear in this tab depend on your audio configuration and the audio hardware installed on your system. Your options might differ from those listed here.

The following table describes options available in the Audio Projects Settings: Output tab.

Audio Project Settings: Output Tab

Option	Suboption	Description
Output Gain		Allows you to calibrate the volume of global audio output.
Monitor Volume — available with software-only configurations		Allows you to adjust the volume of the desktop speakers. Use the Mute button to mute audio output to speakers or headphones.
Mix Mode Selection Menu button	Stereo Mono Direct Out — available when you are using Avid Adrenaline or Avid Mojo SDI hardware	Modifies the way that the system interprets audio values during playback: • **Stereo** mixes the currently monitored audio tracks into a stereo pair. When you are using Avid Adrenaline or Avid Mojo SDI hardware, you can customize the mix using the Stereo Mix Tracks option. • **Mono** pans all the currently monitored tracks to center. This mode also ignores pan effects. • **Direct Out** maps tracks directly to up to eight channels of output. By default, Direct Out maps all audio tracks in numerical sequence to existing output channels. You can remap a track to any channel by clicking the Channel Assignment pop-up menu and selecting another channel. *Pan settings are ignored during a Direct Out operation.*
Stereo Mix Tracks— available when you are using Avid Adrenaline or Avid Mojo SDI hardware	Mix To 1 & 2 Mix To 3 & 4 Mix To 5 & 6 Mix To 7 & 8	Allows you to customize the mix of tracks with Stereo selected in the Mix Mode Selection Menu button. Your Avid editing application sends a stereo mix to the two channels you select. Material panned to the left will be sent to the odd channel, and material panned to the right will be sent to the even channel. The number of channels available depends on the audio output you select or on the options you select in the SD SDI tab of the Output tab.

Audio Project Settings: Output Tab (Continued)

Option	Suboption	Description
All or Timeline Track Maps	All Timeline	Available when you select Direct Out with the Mix Mode Selection Menu button. Allows you to map the track and output channels: • **All** allows you to choose between all available tracks. • **Timeline** allows you to assign output channels to the tracks monitored in the Timeline.
Which Set of Track Maps	Grp 1 Grp 2 Grp 3	Available when you select Direct Out with the Mix Mode Selection Menu button. Allows you to select which set of output tracks to map to audio channels. Groups of tracks display in multiples of 8, up to the maximum of 24 available audio tracks.
Reset		Available when you select Direct Out with the Mix Mode Selection Menu button. Reassigns the audio tracks of the sequence to the default channels that are currently available.
Output type option tab: SD SDI — available when you are using Avid Adrenaline or Avid Mojo SDI hardware	On/Off	Turn this option on to embed the audio with the video in SDI output.
	4 channels 20 bits 4 channels 24 bits 8 channels 20 bits 8 channels 24 bits	Select an option based on the number of channels you want and the sample rate you want on the outgoing SDI signal.
Output type option tab: HD SDI — available when you are using Avid Adrenaline hardware with an HD project	On/Off	Turn this option on to embed the audio with the video in HD SDI output.
	4 channels 24 bits 8 channels 24 bits	Select an option based on the number of channels you want on the outgoing SDI signal.

Audio Project Settings: Hardware Tab

The following table describes settings available in the Audio Projects Settings: Hardware tab.The settings in this tab (aside from HW Calibration) are for informational purposes only and list defaults set by the system, depending on your audio hardware and configuration.

Audio Project Settings: Hardware Tab

Option	Suboption	Description
Card		The type of audio card installed.
Peripheral		The type of peripheral audio device (audio interface) attached to the system.
Sync Mode		Sync is used for audio input and output to ensure the audio sample clock is always in sync with the video clock. This prevents long-term drift between audio and video. When you are working with video and digital audio simultaneously, set your digital audio equipment to the same video reference signal as your video equipment. *Changing the audio input selection automatically selects the correct audio clock source for audio sync.*
HW Calibration — available when you are using Avid Adrenaline hardware	-14dBFS -18dBFS -20dBFS	Allows you to match the software audio calibration to your Avid Adrenaline hardware. The default value for the software and hardware is -20dBFS. If you don't change your hardware settings, keep this value at -20dBFS. For information on changing the hardware setting, see "Calibrating Audio Input Channels" on page 149 and "Calibrating Audio Output Channels" on page 150.

Audio Project Settings: Effects Tab

The following table describes options available in the Audio Projects Settings: Effects tab.

Audio Project Settings: Effects Tab

Option	Suboption	Description
Bypass panel	Clip Gain RT EQ Auto Gain	Allows you to have your Avid editing application ignore the volume settings established with the audio tools when playing back or recording a sequence: • **Clip Gain** bypasses the clip gain mode of the Audio Mixer tool. • **RT EQ** bypasses all unrendered EQ effects set in the Audio EQ tool. • **Auto Gain** bypasses all Automation Gain and Pan effects set in the Automation Gain and Pan mode of the Audio Mixer tool. These buttons function the same as the Bypass buttons in the audio tools.
Render Sample Rate Conversion Quality	High and Slow Balanced Low and Fast	Allows you to set the conversion quality of all non-real-time sample rate conversions.
Real-Time Audio Dissolves	Disabled Enabled	Allows you to play audio dissolves (also called crossfades) as real-time effects. Select Disabled if you experience an audio performance delay in your Avid editing application.
Dissolve Midpoint Attenuation	Const Power –3dB Linear –6dB	Sets the method used for audio dissolves: • **Const Power –3dB** uses constant power to maintain a consistent sound level through the midpoint of the dissolve. • **Linear –6dB** uses a linear gradient to maintain a consistent amplitude through the midpoint of the dissolve.

Bin Settings

The following table describes options available in Bin Settings.

Bin Settings

Option	Description
Auto-Save interval *n* minutes	Specifies the length of time between attempts to auto-save project files. The default is 15 minutes. To avoid interrupting an edit, the Avid system waits until the system is inactive before auto-saving. Use the option "Force Auto-Save at" to specify an interval at which the system interrupts an edit to make the auto-save.
Inactivity period *n* seconds	Specifies the length of time the Avid system waits when the system is inactive before automatically saving the project files. The default is 0 seconds.
Force Auto-Save at *n* minutes	Specifies the maximum length of time between auto-saves. When the system reaches this time, it auto-saves the project files even if it must interrupt an edit to do so. The default is 30 minutes.
Maximum files in a project's attic	Specifies the total number of files stored in the Avid Attic folder. When a bin is saved, the Avid system copies the current version of the bin to a special folder called the Avid Attic. The default is 30 files. Keep more files if there are many editors working on the system. This ensures that all the bins are backed up.
Max versions of a file in the attic	Specifies the total number of single-bin copies stored in the Avid Attic folder. This setting prevents filling the Avid Attic with too many copies of one bin, at the risk of losing the others. The default is five copies.
Double-click loads object in	Determines what happens when you double-click an object in the bin.
New Pop-up Monitor	Creates a new Source pop-up monitor and automatically loads the clip when you double-click an object in the bin.
Source or Record Monitor	• When you have the Composer monitor stretched into two monitors, loads the clip into the Source monitor or the sequence into the Record monitor. • When you are using the single Composer monitor, loads the clip or sequence into the existing Source pop-up monitor.
Enable edit from bin (Splice, Overwrite)	Allows you to edit clips directly from a bin by selecting a clip and clicking the Splice-in or the Overwrite button.
Enable SuperBin	Enables the SuperBin and its functions. See "Conserving Screen Real Estate with the SuperBin" in the Help.

Capture Settings

Capture settings include essential options for capturing, batch capturing, auto capturing, capturing to multiple media files, DV scene extraction, and setting key commands.

The following topics describe options available in Capture Settings.

- Capture Settings: DV Options Tab

Capture Settings: General Tab

The following table describes options available in the Capture Settings: General tab.

Capture Settings: General Tab

Option	Description
Stop deck after capture	Select this option if you want to stop the deck when the capture operation is complete.
Pause deck after capture	Select this option if you want to pause the deck when the capture operation is complete.
Preroll Method	Select one of four methods from the menu. For more information, see "Selecting the Preroll Method" on page 137.
Force unique clip names	Select this option if you want your Avid editing application to automatically assign a clip name based on the bin's name and to make sure this name, or another name you select, is not already used by any other object in the bin.
Activate bin window after capture	Select this option if you want your Avid editing application to change the focus from the Capture Tool window to a bin window after capturing or logging is complete. This allows you to immediately start working in the bin. *This option is also used to activate the window after logging.*
Space bar stops capture	Select this option if you want to use the space bar to create clip names during the capturing process. When you press the space bar during a capture operation, your Avid editing application stops capturing, creates a clip from the capture material, and places the clip in the active bin.
Capture across timecode breaks	When this option is selected, your Avid editing application captures sections of discontinuous timecode on a tape as separate clips. Deselect this option to make your Avid editing application stop capturing and report an error when it encounters a timecode break.
Stop capture if a bad frame is detected	When this option is selected, your Avid editing application stops capturing if a corrupt frame is detected. This setting is enabled by default.

Capture Settings: General Tab (Continued)

Option	Description
Latency for no deck mode *n* frames	Use this setting to compensate for problems that could occur when capturing with external timecode, as described in "Live Capture with External Timecode" on page 166. If you notice that your captured media consistently starts on the wrong frame (usually one or two frames off), use this option to ensure that capturing starts on the correct frame. The option is set to zero by default. This option is not available in software-only configurations.
Capture a single video frame only	Select this option if you want your Avid editing application to capture a single frame of video from your clip. When you click the Record button, the Avid editing application captures the currently displayed frame.
Ask before discarding a canceled clip	Select this option if you want your Avid editing application to query whether to discard the canceled clip, keep it, or try again.
Ask for name when a new tape is seen	Select this option if you want your Avid editing application to query you for a name when it detects a new tape.
Display incoming video in the client monitor	When this option is selected, incoming video is displayed in the Client monitor as soon as you open the Capture tool.
Pause deck while logging	When this option is selected, the deck pauses after you set an OUT point while you log clips; this allows you time to type the name of the clip. See "Logging Directly into a Bin" on page 112. Deselect this option to allow the camera or deck to continue playing after you set an OUT point.

Capture Settings: Batch Tab

The following table describes options available in the Capture Settings: Batch tab.

Capture Settings: Batch Tab

Option	Description
Optimize for disk space	When this option is selected, your Avid editing application captures only the exact amount of material in the master clips plus any additional handles. The tape pauses and prerolls independently for each master clip that is batch captured.
Optimize for batch speed	When this option is selected, your Avid editing application speeds up batch capturing by allowing the deck to continue to roll forward between adjoining clips. To qualify for this operation, the two adjoining clips must meet the following criteria: • There must be 5 seconds or less between the OUT point of the first clip and the IN point of the second clip. • The two clips must have the same video resolution and the same audio rate. *If you select this option, your Avid editing application might occasionally capture more than is required.*
Switch to emptiest drive if current drive is full	When this option is selected, your Avid editing application switches to the target media storage drive with the most available space when the current target drive becomes full during batch capturing. YOur application switches before starting to capture the clip, based on the number of minutes in the clip. For complete instructions, see “Batch Capturing Clips” in the Help. If you do not select this option, capturing stops when a drive becomes full.
Rewind tape when finished	When this option is selected, your Avid editing application automatically rewinds tapes after batch capturing is finished.
Eject tape when finished	When this option is selected, the tape ejects as soon as the last shot from that tape has been used. This adds to efficiency since you can do other tasks while the tape is being used and yet still be alerted at the moment the tape is no longer needed.
Log errors to the console and continue capturing	Select this option if you want your Avid editing application to continue capturing if an error occurs during the capture process.
Capture the tracks logged for each clip	Select this option if you want your Avid editing application to capture the tracks logged for each clip.

Capture Settings: Batch Tab (Continued)

Option	Description
Use the audio sample rate logged for each clip	Select this option if you want your Avid editing application to use the audio sample rate logged for each clip.
Use the audio sample bit depth logged for each clip	Select this option if you want your Avid editing application to use the audio sample bit depth logged for each clip.
Use the video compression logged for each clip	Select this option if you want your Avid editing application to use the video compression logged for each clip.

Capture Settings: Edit Tab

The following table describes options available in the Capture Settings: Edit tab.

Capture Settings: Edit Tab

Option	Description
Enable edit to timeline (splice, overwrite)	Select this option to display the Splice-in Edit and Overwrite Edit buttons in the Capture tool.
Handles	Indicate the amount of footage you want to capture before and after the IN and OUT points of the clips (when capturing to the Timeline only).

Capture Settings: OMF Media Files Tab

If you select OMF in the Media Type tab of the Media Creation dialog box, this tab in the Capture Settings dialog box is labeled OMF Media Files. If you select MXF, the Capture Settings tab is labeled MXF Media Files.

The following table describes options available in the Capture Settings: OMF Media Files tab.

Capture Settings: OMF Media Files Tab

Option	Description
Capture to a single file, 2 GB limit	When this option is selected, capturing stops when the media captured has taken up 2 gigabytes (GB) of storage space on the media drive.
Capture to multiple files	When this option is selected, your Avid editing application writes captured video or audio to multiple files across multiple drive partitions. Select this option for clips that might exceed the 2-GB file-size limit.
Maximum (default) capture time *n* minutes	Before a capture begins, your Avid editing application *preallocates* (reserves) space on the target drive or drives. Your application uses this setting to determine how much space to preallocate. The default capture time is 30 minutes. This setting applies only to capture-on-the-fly and capture from an IN point without an OUT point. Capture from an IN point to an OUT point overrides this setting. Change this setting only if you intend to capture on-the-fly for longer than 30 minutes. In this case, your Avid editing application captures for only the specified number of minutes, so be careful not to underestimate.
Switch to emptiest drive when *n* minutes left	When this option is selected, your Avid editing application switches to another storage drive when the specified amount of time remains.

Capture Settings: MXF Media Files Tab

If you select MXF in the Media Type tab of the Media Creation dialog box, this tab in the Capture Settings dialog box is labeled MXF Media Files. If you select OMF, the Capture Settings tab is labeled OMF Media Files.

The following table describes options available in the Capture Settings: MXF Media Files tab.

Capture Setting: MXF Media Files Tab

Option	Description
Maximum (default) capture time *n* minutes	Before a capture begins, your Avid editing application *preallocates* (reserves) space on the target drive or drives. Your application uses this setting to determine how much space to preallocate. The default capture time is 30 minutes. If Frame Chase capture is enabled (the "During capture, clip is updated in Interplay option is selected), this option defines the expected duration in minutes for a Frame Chase clip that you create during on-the-fly or open-ended capture (that is, when no IN and OUT marks are set in the Capture tool). This setting applies only to capture-on-the-fly and capture from an IN point without an OUT point. Capture from an IN point to an OUT point overrides this setting. Change this setting only if you intend to capture on-the-fly for longer than 30 minutes. In this case, your Avid editing application captures for only the specified number of minutes, so be careful not to underestimate.
During capture, clip is updated in Interplay	When this option is selected, Frame Chase capture is enabled. An initial check-in takes place 10 seconds after a capture begins. Subsequent Interplay updates occur at intervals defined by the Update Interval option. For more information, see "Enabling Frame Chase Capture" in the Help.
Update Interval	Select an update interval from the menu to determine how frequently updates to Interplay occur during a Frame Chase capture. In most circumstances it is preferable to keep the update interval low (1 minute or 2 minutes). This ensures that information added during capture (for example, comments or locators) is available as quickly as possible.
Switch to emptiest drive when *n* minutes left	When this option is selected, the system switches to another storage drive when the specified amount of time remains.

Capture Settings: DV Options Tab

The following table describes options available in the Capture Settings: DV Options tab.

Capture Settings: DV Options Tab

Option	Suboption	Description
DV Scene Extraction		When this option is selected, you can automatically generate subclips and locators based on time-of-day (TOD) information contained in the DV video format. See "DV and HDV Scene Extraction" on page 181.
	Add Locators	Creates locator marks where the TOD information breaks occur while capturing.
	Create Subclips	Creates subclips where the TOD information breaks occur while capturing.
	Both	Creates locators and subclips where the TOD information breaks occur while capturing.
Use software DV25 codec		Select this codec when you are in an NTSC 23.976p or 24p project capturing DV25 from analog or SDI. This allows you to capture standard or advanced pulldown. If you are in an NTSC 23.976 or 24p project and you do not select this DV software codec, you can capture only advanced pulldown.

Capture Settings: Keys Tab

The following table describes options available in the Capture Settings: Keys tab.

Capture Settings: Keys Tab

Option	Description
Function Key Commands (while capturing/logging)	Allows you to change the commands mapped to the function keys on your keyboard. These mappings apply to Capture mode only.
Timed Subclip	Allows you to specify a preset duration for subclips created while capturing.

Communication (Serial) Ports Tool Settings

The Communication (Serial) Ports tool allows you to view the current configuration of the serial interface at any time during editing. You can also use it to reconfigure the ports without closing your Avid editing application or shutting down the computer.

The following table describes options available in the Communication (Serial) Ports Tool settings dialog box.

Communication (Serial) Ports Tool Settings

Option	Description
Remote Play and Capture	Choose a port for an edit controller that uses the Sony serial control protocol. For more information, see "Remote Play, Capture, and Punch-In" on page 170.

Composer Settings

The following topics describe options available in Composer Settings.

Composer Settings: Window Tab

The following table describes options available in the Composer Settings: Window tab.

Composer Settings: Window Tab

Option	Description
First (lower) Row of Info	When this option is selected, your Avid editing application displays one row of tracking, duration, and clip or sequence title information above the Source and Record monitors.
Second Row of Info	When this option is selected, your Avid editing application displays a second row of information above the first row. The second row includes Fast Menu icons, duration information, and when applicable, ganging and multicamera icons.
Digital Scrub Parameters	When this option is selected, your Avid editing application displays the numbers for incoming and outgoing frames played during digital audio scrub. This information is displayed for both source-side and record-side material within the second row of information. These values are set in the Audio Settings dialog box.

Composer Settings: Window Tab (Continued)

Option	Description
Center Duration	When this option is selected, your Avid editing application displays duration data (Mark IN/OUT) for the material loaded in the Source or Record monitor, depending on which monitor is active.
16:9 Monitors	When this option is selected, your Avid editing application displays media in the Source and Record monitors in 16:9 format for standard NTSC and PAL signals. This preference allows you to display the full aspect ratio of wide-screen video and film transfers in the Source and Record monitors during editing.
First Row of Buttons	When this option is selected, your Avid editing application displays only the top row of Monitor command buttons.
Second Row of Buttons	When this option is selected, your Avid editing application displays a second row of buttons under the Source and Record monitors and includes mode buttons in the lower center of Source/Record mode beneath the Splice-in and Overwrite buttons.
Tick Marks in Position Bars	When this option is selected, your Avid editing application switches the display of tick marks (duration indicators) that appear incrementally along the position bars located directly beneath the Source and Record monitors. When deselected, the tick marks are invisible.

Composer Settings: Edit Tab

Use the Color Framing options in the Edit tab of the Composer Settings dialog box if you are going to do online editing using 1-inch, reel-to-reel sources. The options enable your Avid editing application to check each edit in a sequence as you edit, ensuring that transitions do not cut between the four fields (two frames) required to create a complete NTSC color-sync signal phase (or the eight fields — four frames — required for PAL).

The following table describes the Color Framing options. For more information on color framing, see "Tracking Color Frame Shifts" on page 378.

Composer Settings Options (Edit Tab)

Option	Suboption	Description
Color Framing	Off	This option prevents the color framing indicator lights from appearing above the Overwrite and Splice-in buttons. Select this option if you are not performing an online edit with material captured from 1-inch, reel-to-reel tapes. This value is the default. If you turn the Color Framing option Off, you might have to make adjustments during online editing if your edits interrupt the color-sync, signals-per-frame fields in the sequence.
	4 field	For NTSC video.
	8 field	For PAL video. These options display green indicator lights (similar to LEDs), called *color framing indicator lights,* above the Overwrite and Splice-in buttons. These indicator lights are off when the color-sync signal is not in phase for that frame. Steady green lights indicate a frame that is properly phased. If the green light is off, find the proper color phasing when editing by trimming the IN to OUT points by a frame or two until the light comes on and stays on.
Sync Point Editing (Overwrites)		When this option is selected, your Avid editing application overwrites material onto your sequence so that a particular point in the source material is in sync with a particular point in the sequence.
Single Mark Editing		When this option is selected, you can mark an IN or OUT point in the Source monitor and then perform a splice, overwrite, or replace edit. Your Avid editing application uses the current position of the position indicator as the corresponding OUT or IN point.

Composer Settings Options (Edit Tab) (Continued)

Option	Suboption	Description
Phantom Marks		When this option is selected, your Avid editing application provides visual guidance when you set fewer than four IN or OUT points while editing. Phantom marks (shaded IN or OUT mark icons) appear, indicating the remaining edit points calculated by the system to complete the edit. For more information on editing according to the three-mark rules, see "Using Phantom Marks" on page 344.
Auto-create New Tracks		When this option is selected, whenever you load new source material into the Source monitor, your Avid editing application automatically creates any new tracks in the sequence that match existing tracks in the source material. This is the default setting.
Auto-enable Source Tracks		When this option is selected, whenever you load new source material into the Source monitor, the system automatically enables all existing source tracks. This is the default setting.
Copy Source Locators		When this option is selected, if you have locators in a clip in the Source monitor, the system copies the locators when you edit the clip into the Record monitor. This is the default setting.
Undo Only Record Events		When this option is selected, you can limit the Undo command to undo only record actions. For more information, see "Undoing or Redoing Edits" in the Help.

Composer Settings: FF/REW Tab

The following table describes options available in the Composer Settings: FF/REW tab.

The Fast Forward and Rewind buttons in the Avid system monitors behave differently from the equivalent buttons on a tape deck. When you have a sequence loaded in a monitor, the Fast Forward or Rewind button causes a jump (forward or backward) to the next edit that is common to all selected tracks in the Timeline. When you have a clip loaded in a monitor, the Fast Forward or Rewind button causes a jump to the beginning or end of the clip.

Composer Settings: FF/REW Tab

Option	Description
Stop at Head Frames	When this option is selected, the position indicator stops at the first frame (head frame) of the clip on the selected track. This option is the default Fast Forward and Rewind key setting. Each time you press either key, the position indicator moves to the next consecutive head frame.
Stop at Tail Frames	When this option is selected, the position indicator stops at the last frame (tail frame) of the clip on the selected track.
Stop at Locators	When this option is selected, the position indicator moves to the next consecutive frame containing a locator. For more information on using locators, see "Using Locators" on page 331.
Ignore Track Selectors	When this option is selected, your Avid editing application ignores the selected tracks and cues directly to the start (head) frame of the next edit, regardless of the track on which it occurs. The position indicator's final location depends on whether the Stop at Head Frames and Stop at Tail Frames options have been selected.

Composer Settings: MultiCam Tab

The following table describes options available in the Composer Settings: MultiCam tab.

Composer Settings: MultiCam Tab

Option	Suboption	Description
Split Mode Play		
	Quad or Nine Split	Allows playback in the Source monitor of all camera angles in either quad split view or nine split view.
	Fullscreen	Allows playback in the Source monitor of real-time effects for the active camera angle, which displays in full-monitor size.
MultiCam Mode Client Monitor		
	Off	Disables the client monitor during playback of group clips and multigroup clips.
	Quad or Nine Split	Allows the client monitor to display group clips and multigroup clips during playback *The client monitor displays only SD multicamera sequences. You can view playback of HD multicamera sequences in the Source monitor only.*
	Linecut	Allows a linecut (a playback of the edited multicamera sequence) to display in the client monitor. *The client monitor displays only SD multicamera linecuts. You can view playback of HD multicamera sequences in the Source monitor only.*

Controller Settings

The following table describes options available in the Controller Settings.

Controller Settings

Option	Description
Controller	Click the Controller menu, and select one of the following: • No Controller • Digidesign 002 • Digidesign Command|8
Port	Click the Port menu, and select the port used to connect your controller.
Edit Settings	If you have selected a port and controller, click Edit Setting to map the controller functions.
Gain Controller Port	Select a port for a fader or a mixer to record audio gain information. The options on this menu differ depending on the ports you have configured on your Avid editing application.

Correction Settings

The following topics describe options available in the Color Correction settings.

For more information about options in the Correction Settings, see “Customizing Color Correction Mode Settings” in the Help.

Correction Settings: Features Tab

The following table describes options available in the Correction Settings: Features tab.

Correction Settings: Features Tab

Option	Suboption	Description
Saved Color Labels		Select an item from the menu to control how custom colors are named in bins. For information on saving custom colors, see “Assigning Colors to Bin Objects” on page 214.
	None	When selected, your Avid editing application does not supply a name.
	RGB	When selected, your Avid editing application uses the 8-bit values for the red, green, and blue components as the name.
	Name	When selected, your Avid editing application uses the name from the standard HTML color scheme that most closely matches the color you are saving.
	Name and RGB	When selected, your Avid editing application uses both the Name and the RGB information as the name. This is the default option.
Eyedropper 3 x 3 Averaging		When this option is selected, your Avid editing application calculates the color value to pick by averaging the values of a 3 x 3 sample of pixels centered on the eyedropper’s position. This is often useful for picking up a color accurately by sight because it compensates for shifts in color value from one pixel to another. When this option is deselected, your Avid editing application selects the color value of the exact pixel at the eyedropper’s position.
Show Eyedropper Info		When this option is selected, the numerical RGB values appear on the color swatches in the Color Match controls.
Eyedropper Picks from Anywhere in Application		When this option is selected, you can pick colors from anywhere in the application, not only from video images in the Source/Record monitor, using the Color Match eyedroppers.

Correction Settings: AutoCorrect Tab

The following table describes options available in the Correction Settings: AutoCorrect tab.

Correction Settings: AutoCorrect Tab

Option	Suboption	Description
When applying Color correction from the Effect Palette, perform the following operations:		Select an option from menus to define the first, second, and third automatic color correction that Avid Color Correction makes when you apply the Color Correction effect from the Effect Palette.
	Nothing	Makes no adjustment. For example, if you only want to make two automatic corrections when you drag the Color Correction effect from the Effect Palette, set the Third Correction menu in the AutoCorrect tab to Nothing.
	HSL Auto Balance	Makes adjustments to the three ChromaWheels to balance the colors in the image. The equivalent of clicking the Auto Balance button in the Hue Offsets subdividing tab of the HSL tab.
	HSL Auto Black	Adjusts the Setup slider in the Hue Offsets subdividing tab of the HSL tab to make the darkest areas of the image as dark as possible. The equivalent of clicking the Auto Black button in the Hue Offsets subdividing tab of the HSL tab.
	HSL Auto Contrast	Adjusts the Gain and Setup sliders in the Hue Offsets subdividing tab of the HSL tab to maximize the tonal range in the image. The equivalent of clicking the Auto Contrast button in the Hue Offsets subdividing tab of the HSL tab.
	HSL Auto White	Adjusts the Gain slider in the Hue Offsets subdividing tab of the HSL tab to make the brightest areas of the image as bright as possible. The equivalent of clicking the Auto White button in the Hue Offsets subdividing tab of the HSL tab.
	Curves Auto Balance	Makes adjustments to the Red, Green, and Blue curves to balance the colors in the image. The equivalent of clicking the Auto Balance button in the Curves tab.
	Curves Auto Contrast	Makes an adjustment to the Master curve to maximize the tonal range in the image. The equivalent of clicking the Auto Contrast button in the Curves tab.

Deck Configuration Settings

The following table describes options available in Deck Configuration Settings.

For information on the Deck Settings options, see "Deck Settings" on page 652.

Deck Configuration Settings

Option	Description
Configuration name	Type a name for the configuration.
Add channel	Click to add a new channel box. Opens the Channel dialog box.
Add deck	Click to add a deck or DV device. Opens the Deck Settings dialog box.
Delete	Click to delete a deck or DV device.
Auto-configure	With a deck or DV device already connected to your Avid editing application, you can click Auto-configure to bypass the Deck Settings dialog box and automatically configure a deck or DV device with the default settings. *Not all DV devices respond to the Auto-configure command. Due to this limitation, Auto-configure selects only the generic devices.*
Verify configuration against actual decks	Select if you want your Avid editing application to check the deck configuration against the devices physically connected to the system.

Deck Settings

To access the Deck Settings dialog box, do one of the following:

- Click the Add Deck button in the Deck Configuration dialog box.
- In the deck controller section of the Capture tool, click the Deck Selection menu, and select Adjust Deck.
- Double-click the deck name in the Deck Settings dialog box.

Deck Settings Options

Option	Suboption	Description
Name		Type your custom name for the tape deck. The default name matches the deck type.
Description		Enter notes about the deck.

Deck Settings Options (Continued)

Option	Suboption	Description
Notes		Displays configuration information, supplied by Avid, about the deck or DV device you have selected. Not all decks or devices include this information. You can supply your own information in the Description field, and then save the configuration.
Device		Click the Manufacturer menu, and select your device manufacturer. Click the Model menu, and select your device model. If your device does not appear in the list, click the Manufacturer menu, and select Generic, and click the Model menu, and select the type of device. While you are capturing, if you continually see a message box that reads "Fail to find preroll," click the Model menu, and select GenericDVBasicDevice-NTSC or GenericDVBasicDevice-PAL
Address		For VLX*i* use only, see your VLX*i* documentation. If you are using direct serial port deck control, this option is unavailable.
Show	All Devices	Displays all devices by manufacturer and model in the Device menu.
	Decks	Displays only decks by manufacturer and model in the Device menu.
	Transcoders	Displays only transcoders by manufacturer and model in the Device menu.
Preroll		Specifies how many seconds the tape rolls before capturing or digital cut starts. The default is based on the type of videotape recorder (VTR).
Fast Cue		Speeds up long searches if your decks can read timecode in fast forward or rewind mode.
	Switch to ff/rew (seconds): *n*	When this option is selected, your Avid editing application switches to fast forward or rewind if the target timecode is beyond the specified number of seconds from your current location on the tape. By default, the deck switches to fast forward or rewind to reach a target timecode that is more than 60 seconds away. If your deck shuttles very quickly, you can increase this number so that the system uses fast cue only for long searches.
	Switch to Search (seconds): *n*	When this option is selected, your Avid editing application switches out of fast forward or rewind when it is within the specified number of seconds of the target timecode. By default, your Avid editing application switches to search mode when it is 60 seconds from the target timecode.

Deck Preferences Settings

The following table describes options available in Deck Preferences Settings.

Deck Preferences Settings

Option	Description
When the deck contains no tape or drop frame cannot be detected set timecode to	Select the timecode format (Drop Frame or Non-drop Frame) for logging clips when no tape is in the deck or when drop frame or non-drop frame cannot be detected. When a tape is in the deck, your Avid editing application automatically uses the existing timecode format on the tape.
Allow assemble edit & crash record for digital cut	When this option is selected, you can use the assemble-edit and crash-record features in the Digital Cut tool, along with the assemble-editing and manual recording capabilities of your record deck. Select this option to record frame-accurate digital cuts quickly and without striping entire tapes in advance while using the assemble edit feature. Select this option also if you want to operate the deck manually. For more information about digital cuts and assemble editing, see "Generating Output: Basics" in the Help. For information about crash recording, see "Crash Recording" in the Help.
Stop key pauses deck	This option defines the function of the Stop key (space bar) on the keyboard. Select this option to map the space bar to the Pause button on the deck. Deselect this option to map the space bar to the Stop button. If the videotape heads are down in "Stop key pauses deck" mode, pressing the space bar brings up the heads and pauses the deck. The Stop button in the Capture tool always stops the decks.
Shuttle holds speed	When this option is selected, the Shuttle button continues shuttling at a constant speed instead of stopping when you release it.
Stop any paused decks when quitting	When this option is selected, any paused decks are stopped when you quit your Avid editing application. Selecting this option saves wear on the deck heads.
Poll deck during digital cut	When this option is selected, your Avid editing application checks the deck for the current timecode and displays it in the timecode window of the deck controller. If you see degraded image quality on your digital cut (particularly visible as noise during black), deselect this option and record the digital cut again. With the option deselected, the Record button does not flash and the timecode display in the deck controller is not updated for the duration of the digital cut.

Deck Preferences Settings (Continued)

Option	Description
DV Capture Offset & Digital Cut Offset (software-only systems)	Capture Offset (frames) (software-only systems) — Type the number of frames by which you want to offset while you capture. For more information, see "Understanding DV Capture Offset" on page 163.
Digital Cut Offset (systems with Avid DNA hardware attached)	Override Recommended Digital Cut Offset — Select this option to set a digital cut delay. For more information, see "Understanding DV Digital Cut Delay" on page 576. Digital Cut Offset (frames) — Type the number of frames by which you want to delay the digital cut.

Effect Editor Settings

The following table describes options available in Effect Editor Settings. The Effect Editor settings and the commands in the Effect Editor shortcut menu are similar but not identical.

Effect Editor Settings

Option	Description
Indent Rows	When selected, parameter rows are indented from the parameter group row, and any parameter subgroups are indented again. When deselected, the left edges of parameter rows line up with the parameter group row.
Large Text	When selected, text in the Effect Editor appears in 12-point size. When deselected, text in the Effect Editor appears in the default size, 10 points (Windows) or 9 points (Macintosh).
Thumbwheels	When deselected, variable controls in the Effect Editor appear as the default sliders. When selected, variable controls appear as thumbwheels. For information on using thumbwheels, see "Changing a Parameter with a Slider" in the Help.
Real Time Update	When selected, your Avid editing application updates the rendered effect image in real time. Because the update can be slow for complex effects, you have the option to deselect updating in real time.

Effect Editor Settings (Continued)

Option	Description
Set Position To Keyframe	With Set Position To Keyframe selected, when you click a keyframe indicator, your Avid editing application moves the position indicator to the keyframe. With Set Position To Keyframe deselected, when you click a keyframe indicator, the position indicator does not move. Deselecting Set Position To Keyframe allows you to align a keyframe to the position indicator. See "Aligning and Slipping Advanced Keyframes" in the Help.
Update Position While Playing	When selected, the position indicator in the Effect Editor moves while you play the effect. Because using Update Position While Playing can cause video underrun problems in complex real-time effects, the option is deselected by default.
Show Add Keyframe Mode Menu	When selected, the Add Keyframe Mode menu (or the Delete Keyframe Mode menu) appears when you use the Add Keyframe button to add (or delete) keyframes. See "Keyframe Mode Menu Commands" in the Help. With Show Add Keyframe Mode Menu deselected, using the Add Keyframe button performs the default command from the following list (Add Keyframe button commands), without displaying the Add Keyframe Mode menu or the Delete Keyframe Mode menu.
Add Keyframe button commands • Add Keyframe To Active Parameter • Add Keyframes To Active Group • Add Keyframes To Open Groups • Add Keyframes To Enabled Groups • Add Keyframes To Open Graphs • Add Keyframes To All Parameters	Select one as the default command for the Add Keyframe button. • When you deselect Show Add Keyframe Mode Menu, clicking the Add Keyframe button once performs the default command. • When you select Show Add Keyframe Mode Menu, clicking the Add Keyframe button twice performs the default command. (The first click displays the Add Keyframe Mode menu, at which point you can select another command.) *The selection you make for the Add Keyframe mode is mirrored in the Delete Keyframe Mode menu, and vice versa. That is, when you change one, you change both.* For a description of each command, see "Using the Add Keyframe Mode Menu and the Delete Keyframe Mode Menu" in the Help.
Automatic Start and End Keyframes	With Automatic Start and End Keyframes selected, when you promote an effect to advanced keyframes, all keyframe tracks initially appear with a start keyframe and an end keyframe. With Automatic Start and End Keyframes deselected, newly promoted effects initially appear with no keyframes. This option is available only in the Effect Editor settings dialog box.

Export Settings

The following topics describe options available in Export Settings.

Export Settings Dialog Box Options

The following table describes options available in the Export Settings Dialog Box Options.

Export Settings Dialog Box Options

Option	Description
OMFI 1.0 OMFI 2.0	Select one of these options to export a standard OMFI composition for transfer to a third-party workstation that supports OMFI. You can choose to export composition only, or embed the video and audio, or both. See "Exporting Through OMF Interchange" on page 523.
AAF	Select this option to create an Advanced Authoring Format (AAF) file.You can choose to export composition only, or embed the video and audio, or both. See "Exporting OMFI and AAF Files" on page 523.
AFE (Windows only)	Select this option when exporting as AFE. This is compatible when exporting to systems such as Avid DS. See "Exporting Projects and Bins Using AFE Files (Windows Only)" on page 529.
QuickTime Reference	Select this option to create a QuickTime reference movie. A QuickTime reference movie contains pointers (links) to movie files. This is similar to exporting as composition only. See "Exporting As a QuickTime Reference Movie" on page 536.
HDV	Select this option to create a transport stream. See "Exporting an HDV Transport Stream" on page 846.
DV Stream	Select this option to create a standard DV stream. The DV Stream format is often used for distribution on a CD-ROM or over the Web. Use this option when exporting video that will be combined or processed with other DV-formatted media. Requires a video track. See "Exporting Video in DV Stream Format" on page 530.
QuickTime Movie	Select this option to create a self-contained QuickTime movie. See "Exporting QuickTime Movies" on page 533. *If you installed additional QuickTime Export formats, they appear in the menu with tildes (~) before their names. This indicates they have not been qualified and are not supported by Avid.*
AVI (Windows only)	Select this option to export an AVI file through the Avid Codec for AVI or other compression tool. For more information, see "Export Settings: AVI (Windows Only)" on page 672.
Windows Media (Windows only)	Select this option to export your sequence as native Windows Media. You can export your media using one of the Avid-supplied templates or using a custom audio and video template. See "Exporting as Windows Media (Windows Only)" on page 545.

Export Settings Dialog Box Options (Continued)

Option	Description
Audio	Select this option to export audio tracks in the WAVE format, SD II (Macintosh only), or AIFF-C audio format. See "Exporting Tracks As Audio Files" on page 552 and "Export Settings: Audio" on page 680.
Graphic	Select this option to export a single frame, a series of frames, or a file type that supports multiple frames as a graphic file. Select a file type from the menu. See "Exporting As a Graphic File" on page 554. For information about supported file types, see "File Format Specifications" on page 735.
P2	Select this option to write your sequence to a P2 card or cards. See "Exporting Your Clip or Sequence to a P2 Card" on page 266 and "P2 Export Settings" on page 686.
Avid Log Exchange	Select this option to export the selected bin as a shot log file that complies with Avid Log Exchange (ALE) specifications. For information about Avid Log Exchange, see "Converting Log Files with Avid Log Exchange (Windows)" on page 90. *ALE and tab-delimited files include information for master clips and subclips only. Information for other objects, such as group clips, sequences, and precomputes, is not included.*
Tab Delimited	Select this option to export the selected bin as a shot log file in the form of a tab-delimited ASCII text file.

Export Settings: QuickTime Reference Options

The following table describes options available in Export Settings: QuickTime Reference Options.

Export Settings: QuickTime Reference Options

Option	Description
Use Marks	When this option is selected, your Avid editing application uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To export the entire clip or sequence, deselect this option or mark the entire clip or sequence.
Use Enabled Tracks	When this option is selected (default), your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
Fast Draft Defaults	Select this option for a faster export. This option automatically selects Flatten Video Tracks and Fill Spaces with Black. It automatically deselects Render All Video Effects and Premix Audio Tracks.
Digital Mastering Defaults	Select this option to render all video effects and to premix audio tracks before exporting the file. This option automatically selects Flatten Video Tracks, Fill Spaces with Black, Render All Video Effects, and Premix Audio Tracks.
Flatten Video Tracks	When this option is selected, the composition is exported as one video track. When this option is deselected, one QuickTime video track is generated for each video track in the composition, and you cannot select Fill Spaces with Black. Because most third-party applications do not understand multiple QuickTime video tracks, it is a good idea to select this option. This option is automatically selected if you selected the Fast Draft Defaults and the Digital Mastering Defaults options.
Fill Spaces with Black	When this option is selected, blank spaces in video tracks are filled with black in the QuickTime reference movie. Because QuickTime reference movies do not recognize blank spaces, it is a good idea to select this option. When this option is deselected, a QuickTime reference movie might interpret spaces in the video track as gray or as the background of the player. This option is automatically selected if you selected the Fast Draft Defaults and Digital Mastering Defaults options.
Render All Video Effects	When this option is selected, all unrendered video effects, including matte keys and titles, are rendered before export. When this option is deselected, any unrendered effects are ignored. This option is automatically selected if you selected the Digital Mastering Defaults option.

Export Settings: QuickTime Reference Options (Continued)

Option	Description
Display Aspect Ratio	This menu lets you select an image size for the video you want to export: Native, 4:3, or 16:9. This allows you to control the display format without modifying the source file. This feature creates metadata — additional data that is stored with the QuickTime movie. Some applications, such as the QuickTime Player, can interpret this metadata and scale the image at display time. Display Aspect Ratio is useful for QuickTime reference movies because you do not modify the source files of referenced movies. For example, if your source movies are stored at the standard 720 x 486 for NTSC (720 x 576 for PAL), you can create two different QuickTime reference movies that use the same referenced source files — one that uses 4:3 and another that uses 16:9. The menu selections depend on how you open the Export Settings dialog box and whether you have done a prior export.
Mixdown Audio Tracks	When this option is selected, the audio tracks in the composition are mixed to stereo files created at the same location as the movie. When this option is deselected, the Quick Time Reference movie references the original audio media. This option is selected automatically if you select the Digital Mastering Defaults option. If you select the Mixdown Audio Track option, you can also select an audio format, a sample rate, and a sample bit depth.
Audio Format	Select the format that is supported by the application into which you will be importing the QuickTime reference movie. **WAVE** is compatible with Windows applications. **AIFF-C** is compatible with many third-party applications, including Pro Tools. Select the AIFF-C format for all audio media when you need to transfer audio media files directly to a Pro Tools or an AudioVision® system for audio sweetening.
Sample Rate	Select one of the following: Project Rate 32 kHz 44.1 kHz 48 kHz You can use this option if your sequence has a mix of sample rates and you need to create a single sample rate. (You set the project rate in the Audio Project Settings dialog box. For more information, see “Adjusting Audio Project Settings” in the Help.) You can also use this option to change the sample rate if the application to which you are exporting does not support the current sample rate.

Export Settings: QuickTime Reference Options (Continued)

Option	Description
Sample Bit Depth	Select one of the following: **16 bit:** When this option is selected, your Avid editing application exports a 16-bit audio sample depth (currently the industry-standard bit rate for audio). **24 bit:** When this option is selected, your Avid editing application exports a 24-bit audio sample depth for work with higher resolution audio.
Use Network Media References	When this option is selected, the exported movie uses the machine and drive share name of the media drive in the QuickTime reference movie instead of a drive letter. Select this option when the media files referenced by the movie are accessed remotely over the network. If the media files are stored on the same drive as the QuickTime reference movie, you do not need to select this option. When this option is deselected, you cannot select Add Shares for Media Drives.
Add Shares for Media Drives	When this option is selected, your Avid editing application creates a new drive share for referenced media files stored on unshared network drives. The drive share is hidden; that is, other users do not see the shared drive when browsing your computer. You do not need to select this option when media is stored on the same drive as the QuickTime reference movie.
Use Avid DV Codec	Deselect this option when you are working in a cooperative environment where one or more non-Avid systems also have access to the media. This option is selected by default. Select this option if the non-Avid systems have the Avid DV Codec.
Color Levels	Select this option to set the color to RGB or 601/709.

Export Settings: QuickTime Movie Export Options

The following table describes options available in Export Settings: QuickTime Movie Export Options.

Export Settings: QuickTime Movie Export Options

Option	Suboption	Description
Use Marks		When you select this option, your Avid editing application uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To export the entire clip or sequence, deselect this option.
Use Enabled Tracks		When you select this option, your Avid editing application exports only the currently enabled tracks for a selected sequence or clip. To export all tracks in the sequence, deselect this option.
Same as Source		When you select this option, your Avid editing application copies the media files directly with no resolution change. This method is fast and creates output that uses the same quality as your source files. Selecting Same as Source is the best method to use if you plan to process the video on another system, using a third-party application like After Effects® or media cleaner®.
	Use Avid DV Codec	Deselect this option when you are working in a cooperative environment where one or more non-Avid systems also have access to the media. This option is selected by default. *If you export DV media from a 24p or 23.976 project using Same as Source, you must use the Avid DV Codec in order for the QuickTime movies to retain all of the progressive information. Not using the Avid DV Codec results in the movies being treated as interlaced sources when re-imported.*
Custom		When you select this option, your Avid editing application decompresses the files, processes them, and compresses the files at the requested resolution. This method is slower and often loses quality. You should only use the Custom option if you have to directly export a clip or sequence in a particular file format.
Format Options		Appears when you select Custom. Click the Format Options button to open the Movie Settings dialog box. For more information, see "Export Settings: QuickTime Movie Settings" on page 664.
Video and Audio		Select this option if you want to export both the audio and video.

Export Settings: QuickTime Movie Export Options (Continued)

Option	Suboption	Description
Video Only		Select this option if you want to export only the video. For example, use this option if you want to add effects in a third-party application or to use only the video in a multimedia project.
Audio Only		Select this option to export only the audio. For example, use this option if you want to use or enhance audio in a third-party application or you want to use the audio in a multimedia project.
Video Format	Width x Height	Appears when you select Custom. Select this option to set the width of the clip. • **Size to Fit**: This option sizes to fit the specified width and height. You can type in values or select from the predefined values in the Fast menu. *The values in the Fast menu suggest a typical use for each size. For example, 320 x 240 (Internet video, large).* • **Crop/Pad**: This option instructs your Avid editing application not to scale or resize the frames. If necessary, it adds black lines to the top and bottom of the frame to achieve the correct size.
	Color Levels	Select this option to set the color to RGB or 601/709.
	File Field Order	Appears when you select Custom. These options allow you to select the field that is the upper field during export. For 23.976p, 24p, or 25p projects, these options do not appear; all fields are automatically exported as progressive (still) frames. • **Odd (Upper Field First)**: Select this option if you are in a PAL project. In forming the export frame, Field 1 becomes the upper field, that is, Field 1's lines become the odd-numbered lines in the frame (counted starting from 1). Field 2's lines become the even-numbered lines. • **Even (Lower Field First)**: Select this option if you are in an NTSC project. In forming the export frame, Field 1 becomes the lower field, that is, Field 1's lines become the even-numbered lines in the frame. Field 2's lines become the odd-numbered lines. • **Single Field**: Select this option if you want the output file to consist of only Field 1. In this case, the single field of 243 lines for NTSC (288 lines for PAL) is resized to fit the frame as specified in the width and height selection.
Create Preview		Select this option if you want to create a preview of the QuickTime movie.

Export Settings: QuickTime Movie Export Options (Continued)

Option	Suboption	Description
Display Aspect Ratio		The display aspect ratio allows you to apply a scaling to the video: Native, 4:3, or 16:9. The display aspect ratio lets you control the display format without modifying the source file. This feature creates metadata — additional data that is stored with the QuickTime movie. Some applications, such as the QuickTime Player, can interpret this metadata and scale the image at display time. Display aspect ratio is useful for the Same as Source option because that option also preserves the original format. When you select Same as Source, the selections in the Display Aspect Ratio area are based on the resolution of the media you are exporting and the project type (NTSC or PAL). When you select Custom, your Avid editing application calculates the Display Aspect Ratio selections on the values you enter for Width x Height in the Video Format tab.

Export Settings: QuickTime Movie Settings

The following table describes options available in Export Settings: QuickTime Movie Settings.

QuickTime Movie Settings

Option	Suboption	Description
Video		
Settings	Standard Video Compression Settings	See "Export Settings: QuickTime Compression Settings" on page 665.
Filter	Choose Video Filter	Allows you to apply a single effect filter during an export.
Size	Export Size Settings	Select Use current size or Use custom size. QuickTime allows you to set a size, but Avid recommends you set the size in the Width and Height text boxes of the Export Settings dialog box. Both settings have the same effect, and the QuickTime size setting overrides the Avid size setting.
Sound		
Settings	Compressor	Allows you to select a sound compression setting for your export, along with other options.

QuickTime Movie Settings (Continued)

Option	Suboption	Description
Prepare for Internet Streaming	Fast Start	Allows a movie to begin playing over the Internet without downloading the entire movie first. This method of playing movies over the Internet is referred to as progressive download or HTTP streaming. It does not require a streaming video server.
	Fast Start - Compressed Header	A better choice for progressive downloading. This option works the same as Fast Start (see previous entry), but compresses the header information. The header is the portion of the file that allows the movie to start playing before the entire movie is downloaded. Compressing the header allows it to download faster. This is important for large movies (movies that are longer than several minutes).
	Hinted Streaming	Select this option if you are putting the exported file on a streaming video server. The file does not stream without a hint track for each track in the movie. The hint tracks allow the streaming video server to split the file into packets for the streaming. A file with hinted streaming also plays as a progressive download. However, it will probably play more slowly than a Fast Start movie because it contains additional information and is therefore larger. For additional options, click Track Hinter Settings. The RTP (Real Time Protocol) Track Settings dialog box opens. For more information, see your QuickTime documentation.

Export Settings: QuickTime Compression Settings

The Standard Video Compression Settings dialog box gives you access to a wide range of QuickTime video codecs. The set of codecs available from the Compression Type list might vary depending on your computer's configuration and your operating system. Other options that appear in the dialog box vary depending on the codec you select from the Compression Type list. If you have an Internet connection, you can get help on using the options in this dialog box from the QuickTime web site by pressing the ? button in the bottom left corner of the dialog box.

The list of codecs includes Avid codecs, which create encapsulated media files for export of high-resolution files that are readable within QuickTime applications. The Avid codec you use to export the file must be loaded on the system running the QuickTime application for the application to read the exported file. See "Installing or Copying the Avid Codecs for QuickTime on Other Systems" on page 543.

The following table describes the Avid codecs available in the Standard Video Compression Settings dialog.

Export Settings: Avid QuickTime Codecs

Codec	Description
Avid 1:1x	For high quality, 8-bit or 10-bit, lossless compression (in which no picture information is lost); available for use with MXF media files. This format cannot be used by Meridien systems. It can be used by both Avid DS and Avid DNA-based systems. It uses 4:2:2 sampling.
Avid DNxHD™ Codec	For DNxHD encoding with 8-bit and 10-bit resolutions; available for use with MXF media files. This format cannot be used by Meridien-based systems. It can be used by both Avid DS and Avid DNA-based systems.
Avid DV	For compression compatible with Avid Xpress DV and Avid NewsCutter products or with Avid Meridien products with the DV/MPEG option.
Avid DV100 Codec	For DVCPRO HD encoding. This format cannot be used by Meridien systems. It can be used by both Avid DS and Avid DNA-based systems. It uses 4:2:2 sampling.
Avid Meridien Compressed	For compression compatible with Avid Meridien products.
Avid Meridien Uncompressed	For 1:1 resolution used in Avid Meridien products.
Avid MPEG2 50 mbit	For MPEG-2 IMX 50,40,30 encoding; an interframe compression used in Sony IMX VTRs and cameras. It uses 4:2:2 sampling.
Avid Packed Codec	For high quality, 10-bit, lossless compression (in which no picture information is lost); available for use with MXF media files. This format cannot be used by Meridien-based systems. It can be used by both Avid DS and Avid DNA-based systems. It uses 4:2:2 sampling.

Export Settings: HDV

The following table describes options available in Export Settings: HDV.

Export Settings: HDV

Option	Description
Use Marks	When you select this option, your Avid editing application uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To output the entire clip or sequence, deselect this option.
Use Enabled Tracks	When this option is selected (default), your Avid editing application uses tracks that are enabled in the Timeline. To output the entire clip or sequence, deselect this option.
Video Quality	Select one of the following qualities. The quality level inversely trades off with the time required to complete the export: Draft is fastest, while Best takes the longest time to complete. If you have a slower system, you might want to see if the Better or Draft quality is good enough for your needs. • Draft • Better • Best

Export Settings: DV Stream

The following table describes options available in Export Settings: DV Stream.

Export Settings: DV Stream

Option		Description
Use Marks		When you select this option, your Avid editing application uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To export the entire clip or sequence, deselect this option.
Use Enabled Tracks		When this option is selected (default), your Avid editing application uses tracks that are enabled in the Timeline. To export the entire clip or sequence, deselect this option.
Format Options		Click this button to select a video format and an audio format for export.
Video and Audio		Select this option if you want to export both the audio and the video.
Video Only		Select this option if you want to export only the video.
Audio Only		Select this option if you want to export only the audio. For example, use this option if you want to use or enhance audio in a third-party application or use the audio in a multimedia project.
Video Format	Color Levels	Select this option to set color to RGB or 601/709.
	File Field Order	These options allow you to select the field that is the upper field during export. For 23.976p, 24p, or 25p projects, these options do not appear; all fields are automatically exported as progressive (still) frames. • **Odd (Upper Field First)**: Select this option if you are in a PAL project. In forming the export frame, Field 1 becomes the upper field, that is, Field 1's lines become the odd-numbered lines in the frame (counted starting from 1). Field 2's lines become the even-numbered lines. • **Even (Lower Field First)**: Select this option if you are in an NTSC project. In forming the export frame, Field 1 becomes the lower field, that is, Field 1's lines become the even-numbered lines in the frame. Field 2's lines become the odd-numbered lines. • **Single Field**: Select this option if you want the output file to consist of only Field 1. In this case, the single field of 243 lines for NTSC (288 lines for PAL) is resized to fit the frame as specified in the width and height selection.

Export Settings: OMFI, AAF, and AFE

The following table describes options available in Export Settings: OMFI, AAF, and AFE.

Export Settings Options (AAF, OMFI, and AAF)

Option	Suboption	Description
Export As:	AAF	Select this option if the application to which you are exporting supports AAF.
	OMF 1.0	Select this option if the application to which you are exporting does not support OMFI Version 2.0.
	OMF 2.0	Select this option if the application to which you are exporting supports OMFI Version 2.0. If you are not sure, select OMF 1.0.
	AFE (Windows only)	Select this option if the application to which you are exporting supports AFE. *There are no options available to you when you select AFE. Your Avid editing application uses the default settings.*
Use Marks		When you select this option, your Avid editing application uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To export the entire clip or sequence, deselect this option.
Use Enabled Tracks		When you select this option, your Avid editing application exports only the currently enabled tracks for a selected sequence or clip. To export all tracks in the sequence, deselect this option.
Include All Video Tracks in Sequence		Select this option to include all video tracks from the sequence in the AAF or the OMFI file. The Video Details tab appears.
Include All Audio Tracks in Sequence		Select this option to include all audio tracks from the sequence in the AAF or the OMFI file. The Audio Details tab appears.
The following options appear in both the Video Details tab and the Audio Details tab:		
Export Method:		Select an export method. Other options in the dialog box change depending on which method you choose.
	Link to (Don't Export) Media	Select this option when you want to export an AAF or an OMFI composition with links to the media in its current location. Media is not embedded in the file and is not exported.
	Copy All Media	Select this option when you want to copy media to another drive or folder and export an AAF or an OMFI composition.

Export Settings Options (AAF, OMFI, and AAF) (Continued)

Option	Suboption	Description
	Consolidate Media	Select this option when you want to export an AAF or an OMFI composition with links to media that you have consolidated. For more information about consolidating media, see "Consolidating Media" in the Help.
	Handle Length: *nn* Frames	Enter the number of frames you want to use as handles for consolidated clips. Handles refer to material outside the IN and OUT points and are used for dissolves and trims with the new, shorter master clips. The default is 60.
The following options appear in the Video Details tab only, depending on the export method:		
Export Method: Video Mixdown		Creates a new video mixdown track for the sequence. For more information about video mixdown, see Performing a Video Mixdown" in the Help.
	Mixdown with Video Edits	Compatible with Avid Digidesign Pro Tools v7.2 or later.
	Mixdown without Video Edits	Compatible with all Avid Digidesign Pro Tools versions.
Render Video Effects		Select this option to render video effects during export.
Transcode Video to:	Resolution menu	Select a resolution to which you want to transcode the video to during export.
The following options appear in the Media Destinations area for Video and Audio, depending on the export methods:		
Media Drive		Specify a media drive as the destination for newly created or copied media.
	Use Media Creation Settings	Select Use Media Creation Settings to use the drive you selected in the Media Creation dialog box. If you deselect Use Media Creation Settings, you can select a different destination drive.
Folder		Specify an arbitrary folder as the destination for newly created or copied media.
	Use Same Folder as AAF File	If you deselect Use Same Folder as AAF File, a path name appears. Click Select Folder to navigate to a different folder.
Embedded in AAF/OMF		Media files are embedded in the exported an AAF or OMFI file specified in the Export dialog box.

Export Settings Options (AAF, OMFI, and AAF) (Continued)

Option	Suboption	Description
The following options appear in the Audio Details tab only, depending on the export method:		
Include Rendered Audio Effects		Select this option to include rendered audio effects during export.
Render All Audio Effects		Select this option to render all audio effects during export.
Add Audio Mixdown Track(s)	Mono, Stereo	Select this option to add an audio mixdown track, and then select the type of track you want. For more information about audio mixing, see "Using Live Mix Mode" in the Help.
Convert Audio Sample Rate to:	Project rate, 32 kHz, 44.1 kHz, or 48 kHz	Select this option if your sequence has a mix of sample rates and you need to create a single sample rate. (You set the project rate in the Audio Project Settings window. For more information see "Audio Project Settings" on page 626.) You can also use this option to change the sample rate if the application to which you are exporting does not support the current sample rate.
Convert Audio Sample Bit Depth to:	Project rate, 16 bit, 24 bit	Select this option if your sequence has a mix of sample bit depths and you need to create a single sample bit depth. (You set the project bit depth in the Audio Project Settings window. For more information see "Audio Project Settings" on page 626.) You can also use this option to change the sample bit depth if the application to which you are exporting does not support the current sample bit depth.
Convert Audio File Format to:		If your sequence has a mix of audio file formats, and you want to embed media, you must choose a single audio file format. (You set the project format in the Audio Project Settings window. For more information see "Audio Project Settings" on page 626.) Audio files are converted to this format during export. This choice is optional if you want to consolidate and link media.
	Project rate	Select Project to use the rate that matches the project format.
	WAVE	Select WAVE (.WAV file name extension) to link to or embed audio tracks in the WAVE format. Nearly all Windows applications that support sound use WAVE files. QuickTime also supports the WAVE format.
	AIFF-C	Select AIFF-C to link to or embed audio tracks in the industry-standard AIFF-C format. Note that your Avid system does not compress audio media.
	PCM	PCM is the only audio file format available for AAF export.

Export Settings: AVI (Windows Only)

The following table describes options available in Export Settings: AVI.

Export Settings: AVI

Option	Suboption	Description
Use Marks		When this option is selected, your Avid editing application uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To export the entire clip or sequence, deselect this option.
Use Enabled Tracks		When this option is selected, your Avid editing application exports only the currently enabled tracks for a selected sequence or clip. To export all tracks in the sequence, deselect this option.
Video and Audio		Select this option if you want to export both the audio and the video.
Video Only		Select this option if you want to export only the video.
Audio Only		Select this option if you want to export only the audio. For example, use this option if you want to use or enhance audio in a third-party application or use the audio in a multimedia project.
Video Format	Codec Options	When you click this button, the Video Compression dialog box opens. For more information, see "Export Settings: AVI Video Compression (Windows Only)" on page 674.
	Width x Height	This option allows you to set the width and height of the clip. Click the Fast Menu button, and select from a list of standard dimensions. • **Size to Fit:** This option sizes to fit the specified width and height. • **Crop/Pad:** Crop/Pad never scales or resizes frames. If necessary, the system adds black lines to the top and bottom to achieve the correct size.
	Color Levels	This option allows you to set color to RGB or 601/709.
	FPS	This option sets the frame-per-second (fps) rate for AVI export.

Export Settings: AVI (Continued)

Option	Suboption	Description
	File Field Order	These options allow you to choose the field that will be the upper field during export. For 23.976p, 24p, or 25p projects, these options do not appear; all fields are automatically exported as progressive (still) frames. • **Odd (Upper Field First):** Select this option if you are in a PAL project. In forming the export frame, Field 1 becomes the upper field, that is, Field 1's lines become the odd-numbered lines in the frame (counted starting from 1). Field 2's lines become the even-numbered lines. • **Even (Lower Field First):** Select this option if you are in an NTSC project. In forming the export frame, Field 1 becomes the lower field, that is, Field 1's lines become the even-numbered lines in the frame. Field 2's lines become the odd-numbered lines. • **Single Field:** Select this option if you want the output file to consist of only Field 1. In this case, the single field of 243 lines for NTSC (288 lines for PAL) is resized to fit the frame as specified in the width and height selection.
Audio Format	Mono	Exports audio to a single channel.
	Stereo	Exports audio to two channels.
	Sample Rate	Select this option to select the sample rate. **Project Rate:** The native rate of the chosen audio media (32 kHz, 44.1 kHz, or 48 kHz). **22.050 kHz:** Half the sample rate of 44.1-kHz media. **11.025 kHz:** One quarter the sample rate of 44.1-kHz media.
	Sample Bit Depth	Select this option to select the sample bit depth. **8 bit:** When this option is selected, the system exports an 8-bit audio sample depth for use in third-party systems that do not support 16-bit. This option is also used to minimize the data throughput requirements (for example, to improve playback in multimedia projects). **16 bit:** When this option is selected, the system exports a 16-bit audio sample depth (currently the industry-standard bit rate for audio).

Export Settings: AVI Video Compression (Windows Only)

The following table describes options available in Export Settings: AVI Video Compression.

Export Settings: AVI Video Compression

Option	Suboption	Description
Compressor	Cinepak Codec by Radius	For export at low resolution where high quality is not an issue, such as presentations or educational uses, or for small-screen-size playback from CD-ROM or hard drive. This codec uses a compression algorithm optimized for CD-ROM playback. Click Configure to open the Cinepak for Windows 32 configuration dialog box. You can then choose to compress to color or to black and white.
	Microsoft Video 1	Use this option when you create files that will play with Video for Windows. Click Configure to open the Configure dialog box. You can then adjust the quality of the compressed file using the Temporal Quality Rate slider.
	Full Frames (Uncompressed)	For high-quality export in which no picture information is lost. This option does not compress the file and can result in very large files. To export an uncompressed file at 1:1, use the Avid Codec for AVI.
Compression Quality slider		Use this option to adjust compression quality for certain codecs. This slider does not adjust quality for the Avid AVI codec.
Key Frame Every *n* frames		Use this option to have your Avid editing application use keyframes as a reference for subsequent frames. Enter a numeric value to specify the frequency of the keyframes. This option is not available for the Avid Codec for AVI or for uncompressed files.
Data Rate *n* KB/sec		Use this option to set a specific data rate for the compressed file, in kilobytes per second. This option is not available for the Avid Codec for AVI or for uncompressed files.

Export Settings: Windows Media Export Options (Windows Only)

The following topics describe the Windows Media Export options:

- Windows Media Legacy Template
- Existing Windows Media Custom Profile
- Windows Media Options Video Settings
- Custom Profile Audio Settings

Windows Media Legacy Template

The following table describes options available in Windows Media Legacy Template.

Windows Media Legacy Template

Option	Description
Use Marks	When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
Use Enabled Tracks	When Use Enabled Tracks is selected, your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
Version	This refers to the available versions (v8, v7, or v4) Windows Media templates.
Templates	Allows you to choose one of the Avid supplied Windows Media templates. See "Exporting Using an Avid Supplied Template (Windows Only)" on page 545.

Existing Windows Media Custom Profile

The following table describes options available in Existing Windows Media Custom Profile.

Existing Windows Media Custom Profile

Option	Description
Use Marks	When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
Use Enabled Tracks	When Use Enabled Tracks is selected, your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
Set	Allows you to browse to find an existing .prx file on your system. See "Exporting Using an Existing Windows Media Profile (Windows Only)" on page 547.

Windows Media Options Video Settings

The following table describes options available in Windows Media Options Video Settings.

Windows Media Options Video Settings

Option	Description
Use Marks	When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
Use Enabled Tracks	When Use Enabled Tracks is selected, your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
Width	This option sets the width of the clips for export.
Height	This options sets the height of the clips for export.
FPS	This option sets the frame-per-second (fps) rate for the export.
Video Type	Choose Progressive or Interlaced. Progressive media is composed of single frames, each of which is vertically scanned as one pass. Interlaced media is composed of two fields, each of which contains one-half the scan lines of the frame. Interlaced frames are standard for NTSC and PAL video media.
Pixel Aspect Ratio	Select this option to apply a scaling to the video. The pixel aspect ratio allows you to control the display format without modifying the source file.
Uncompressed	Select this option for high-quality export in which no picture information is lost. This option does not compress the file and can result in very large files.
Codec	Choose from the list of video codecs.

Windows Media Options Video Settings (Continued)

Option	Description
(This option is not available when you select Uncompressed.)	**Windows Media MPEG-4 Video V3 —** Creates high-quality video for streaming, download and play. Enables playback of interlaced content on televisions. **ISO MPEG-4 Video V1 —** The MPEG-4 standard was defined by the Moving Picture Experts Group (MPEG), the working group within the International Organization for Standardization (ISO). MPEG-4 was designed to deliver DVD (MPEG-2) quality video at lower data rates and smaller file sizes. **Windows Media Video V7 —** Enables Windows Media Player 7 to view encoded video content without first having to download the latest codecs. This is the best choice when the encoding computer cannot support the performance requirements of the newer Windows Media Video codecs. **Windows Media Screen V7 —** Specially optimized for use for screen captures and some animations **Windows Media Video 9 Screen —** For content that needs to be captured from the computer screen. This codec is ideal for delivering demos or demonstrating computer use for training. Windows Media Video 9 Screen delivers better handling of bitmap images and screen motion, even on relatively slow CPUs. **Windows Media Video 9 —** Offers improved quality over Windows Media Video 8, with the highest gains seen at the higher bit rates; provides improved interlaced support. **Windows Media Video V8 —** Supports a wide variety of network bandwidths. Deinterlaces interlaced content before encoding. **Windows Media Video 9 Advanced Profile —** Use this profile to deliver either progressive or interlaced content at data rates as low as one-third that of the MPEG-2 codec—with the same quality as MPEG-2.
Passes (This option is not available when you select Uncompressed.)	Select either 1 Pass or 2 Pass. With 1 Pass encoding, the content passes through the encoder once, and compression is applied as the content is encountered. With 2 Pass encoding, the content is analyzed during the first pass, and then encoded in the second pass based on the data gathered in the first pass. 2 Pass encoding can result in better quality but it takes longer because the encoder goes through the content twice.
VBR (This option is not available when you select Uncompressed.)	Variable Bit Rate. Allows you to set the quality of the video profile setting.
Quality	Choose Constrained or Unconstrained. Choose constrained when playing either locally or on a device that has a constrained reading speed, such as a CD or DVD player.
Bit Rate	The bit rate represents the size of the data stream in megabits per second.

Windows Media Options Video Settings (Continued)

Option	Description
Buffer Size	Type the number of seconds that you want content to be stored before encoding begins. A larger buffer results in better quality content, but requires more memory. When you encode content, the encoding process is delayed by the amount of time specified in the buffer; the content is also delayed by the same amount of time when streaming to a player.
Quality	The setting can range from 0 to 100, with 100 being the highest quality.
Keyframe	Amount of keyframes used as part of the encoding sequence. The value is the number of keyframes used for every second of video. A lower number results in higher quality, but larger files.
Language	Select from the list of available languages.

Custom Profile Audio Settings

The following table describes options available in Custom Profile Audio Settings.

Custom Profile Audio Settings

Option	Description
Use Marks	When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
Use Enabled Tracks	When Use Enabled Tracks is selected, your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
Uncompressed	Select this option for high-quality export in which no picture information is lost. This option does not compress the file and can result in very large files.

Custom Profile Audio Settings (Continued)

Option	Description
Codec (This option is not available when you select Uncompressed.)	Select one of the following codecs: **Windows Media Audio 9.1 —** Provides improvement in compression over the Windows Media 8 Audio codec. Supports VBR audio encoding. **ACELP.net —** In some instances, the Sipro Labs ACELP codec appears in the list of codecs. For example, if you import a profile that was created by using Windows Media Encoder version 7.1. If this occurs, Avid recommends that you use the Windows Media Audio 9 Voice codec instead. **Windows Media Audio 9 Voice —** Provides superior quality for audio content with a voice emphasis. Provides for mixed-mode encoding of voice and music. Intended for playback at bit rates at 20 Kbps or lower. **Windows Media Audio 9.1 Professional —** This supports a full surround-sound experience and dynamic range control. Intended for data rates of 128 to 768 Kbps. **Windows Media Audio 9.1 Lossless —** Provides lossless encoding of audio content. Supports multichannel audio encoding and dynamic range control.
Passes (This option is not available when you select Uncompressed.)	Select either 1 Pass or 2 Pass. With 1 Pass encoding, the content passes through the encoder once, and compression is applied as the content is encountered. With 2 Pass encoding, the content is analyzed during the first pass, and then encoded in the second pass based on the data gathered in the first pass. 2 Pass encoding can result in better quality but it takes longer because the encoder goes through the content twice.
VBR (This option is not available when you select Uncompressed.)	Variable Bit Rate. When you select this option, the formats available are VBR formats. If you deselect this option, the formats available are CBR formats.
Format (These options change when you select VBR.)	You can encode audio and video content at either a constant bit rate (CBR) or a variable bit rate (VBR). Use CBR if you plan to stream the content. Use VBR when you plan to distribute the content for downloading and playing either locally or on a device that has a constrained reading speed such as a CD or DVD player. Choose from one of the format options.
Buffer Size	Type the number of seconds that you want content to be stored before encoding begins. A larger buffer results in better quality content, but requires more memory. When you encode content, the encoding process is delayed by the amount of time specified in the buffer; the content is also delayed by the same amount of time when streaming to a player.
Language	Select from the list of languages.

Export Settings: Audio

The following table describes options available in Export Settings: Audio.

Export Settings: Audio

Option	Description
Use Marks	When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
Use Enabled Tracks	When Use Enabled Tracks is selected, your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
Mono Stereo	Select this option to export audio tracks in either mono or stereo.
Sample Rate	Select one of the following: • Project Rate • 32 kHz • 44.1 kHz • 48 kHz You can use this option if your sequence has a mix of sample rates and you need to create a single sample rate. (You set the project rate in the Audio Project Settings dialog box. For more information, see “Adjusting Audio Project Settings” in the Help.) You can also use this option to change the sample rate if the application to which you are exporting does not support the current sample rate.
Sample Bit Depth	Select one of the following: • **16 bit:** When this option is selected, your Avid editing application exports a 16-bit audio sample depth (currently the industry-standard bit rate for audio). • **24 bit:** When this option is selected, your Avid editing application exports a 24-bit audio sample depth for work with higher resolution audio.
Audio Format	WAVE: Select this option to export audio tracks in the WAVE format (.wav file name extension). Nearly all Windows applications that support sound use WAVE files. QuickTime also supports the WAVE format. AIFF-C: Select this option to export audio tracks in the industry-standard AIFF-C format, which is compatible with many third-party sound editing and multimedia applications. SDII (Macintosh only): Select this option to export audio tracks in the Sound Designer II format, which is compatible with Pro Tools and other third-party applications.

Export Settings: Graphic

The following table describes options available in Export Settings: Graphic.

Export Settings: Graphic

Option	Suboption	Description
Use Marks		When this option is selected, your Avid editing application uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To export the entire clip or sequence, deselect this option.
Use Enabled Tracks		When this option is selected, your Avid editing application exports only the currently enabled tracks for a selected sequence or clip. To export all tracks in the sequence, deselect this option.
Graphic Format	Format Options	This option allows you to select a graphic format for export. The Format Options button allows you to set export parameters.
Width x Height		This option allows you to set the width and height of the clip. Click the Fast Menu button, and select from a list of standard dimensions. • **Size to Fit:** This option sizes to fit the specified width and height. • **Crop/Pad:** Crop/Pad never scales or resizes frames. If necessary, the system adds black lines to the top and bottom to achieve the correct size.
Color Levels		This option allows you to set color to RGB or 601/709.
Sequential Files		This option produces a series of still images, numbered sequentially. The fps rate of the source file determines the number of still image files that are produced. Select Locators only to produce images only for those frames that contain locators.

Export Settings: Graphic (Continued)

Option	Suboption	Description
File Field Order		This option allows you to choose the field that will be the upper field during export. For 23.976p, 24p, or 25p projects, these options do not appear; all fields are automatically exported as progressive (still) frames. • **Odd (Upper Field First):** Select this option if you are in a PAL project. In forming the export frame, Field 1 becomes the upper field, that is, Field 1's lines become the odd-numbered lines in the frame (counted starting from 1). Field 2's lines become the even-numbered lines. • **Even (Lower Field First):** Select this option if you are in an NTSC project. In forming the export frame, Field 1 becomes the lower field, that is, Field 1's lines become the even-numbered lines in the frame. Field 2's lines become the odd-numbered lines. • **Single Field:** Select this option if you want the output file to consist of only Field 1. In this case, the single field of 243 lines for NTSC (288 lines for PAL) is resized to fit the frame as specified in the width and height selection.

Export Settings: Graphic Format

The following table describes options available in Export Settings: Graphic Format.

Export Settings: Graphic Format

Option	Suboption	Description
Alias™		This option creates files that are compatible with Alias™/Wavefront™ systems.
BMP	Windows	This option creates files that are compatible with systems running the Microsoft Windows operating system.
	OS/2	This option creates files that are compatible with systems running the IBM® OS/2® operating system.
Chyron®		Developed by Chyron Corporation for use with video frame buffers of Chyron® character generator titles.
Cineon™	Blackpoint (Windows) Black Point (Macintosh)	This option allows you to adjust a film exposure value that corresponds to filming a 2% black card. Values can be between 0 and 1022. The default value of 0 is adequate for most uses.

Export Settings: Graphic Format (Continued)

Option	Suboption	Description
	Whitepoint (Windows) White Point (Macintosh)	This option allows you to adjust a film exposure value that corresponds to filming a 90% white card. Values can be between 1 and 1023. If the files came from and will be transferred back to a Cineon™ system, use a white point of 1023. The default value of 685 is appropriate if the final destination is not a Cineon system — for example, a video display.
	Gamma	This option specifies an adjustment to correct for any gamma inconsistencies in the output display. Values can be between 0.01 and 100.0. Use a value of 1.0 (the default) for images displayed on a PC monitor. Use a value of 0.59 for a Silicon Graphics® or a Macintosh monitor. Use a value of 0.45 for ITU-R 601 (CCIR 601) video.
ERIMovie	Pack 24 bits	This option controls whether the image data is packed into 24-bit color depth (compressed) or is saved as 32-bit (raw) color depth.
Framestore		The Framestore format is a 16-bit video image format used on the Amiga® in conjunction with Newtek's Video Toaster™ hardware. HIIP supports both compressed and uncompressed Framestore formats.
IFF		Developed by Electronic Arts. IFF (Interchange File Format), or more specifically IFF-ILBM (InterLeaved BitMap), is the standard file format by which applications on the Amiga platform transfer image files.
JPEG	Quality	This option controls the output file size and quality. Higher values produce better images but larger file sizes. Conversely, lower values reduce the image quality but result in smaller file sizes.
	Baseline	This option is selected by default. To see if this option is required, see the documentation that came with your JPEG-supported applications.
	Progressive	This option allows you to save progressive JPEG files, which divide the file into a series of scans of the image that increase in quality. Each scan progressively improves the recognizability of the image. Progressive JPEG files can be recognized only by applications with progressive JPEG support, such as some Web browsers.
OMF	NTSC/PAL Frame Rate	These options appear when you select a compression ratio that allows you to select either NTSC or PAL. When you select an option, the system displays the required image size and the default frame rate.

Export Settings: Graphic Format (Continued)

Option	Suboption	Description
	Compression	This option controls the compression ratio and, therefore, the size of the file. You can choose from all the compression ratio options used by your Avid editing application when recapturing. For more information on Avid compression ratios, see "Resolutions and Storage Requirements" on page 755.
PCX™		Developed by Zsoft Corporation for use with their PC PaintBrush™ paint software.
Photoshop	Color Depth	The 8 bits option saves 8-bit files. The 16 bits option saves 16-bit files. The Automatic option saves the image in the same depth as the original loaded image.
	Compression	This option controls the size of the file on disk. Disabling compression creates larger files on disk
PICS		
PICT	Create MacBinary header (Windows only)	This option creates a file with a MacBinary header. MacBinary is a file format for representing all the information in a Macintosh file in one binary file. It is a compact file format, useful for storing a Macintosh file on a non-Macintosh system for later retrieval. Use a file expander utility to decode a MacBinary file once it is back on a Macintosh system.
Pixar®		This option allows you to save the file in the Pixar® format.
PNG	Color Depth	The 8 bits option saves 8-bit files. The 16 bits option saves 16-bit files. The Automatic option saves the image in the same depth as the original loaded image.
	Interlaced	This option allows you to save the file for progressive display, similar to progressive JPEG files. As the file is transmitted, the recognizability of the image improves. Interlaced PNG files can be recognized only by applications with interlaced PNG support, such as some Web browsers.
QRT		Developed on the Amiga® personal computer to run on several operating systems. Used by many ray tracing programs, such as DKB Ray Trace and the QRT ray tracer.
Rendition		Developed by Numerical Design, Ltd.

Export Settings: Graphic Format (Continued)

Option	Suboption	Description
SGI®	Color Depth	The 8 bits option saves 8-bit files. The 16 bits option saves 16-bit files. The Automatic option saves the image in the same depth as the original loaded image.
Softimage		Developed by Softimage®, Inc. for use in Softimage software.
SunRaster™		Developed by Sun® Microsystems, Inc. and supported mainly in Sun applications.
TARGA®	Color Depth (Windows only)	This option controls how images are saved. The 5-bit option saves data in Targa 16 format. The 8-bit option saves data in Targa 24/32 format.
	Compression	This setting controls the size of the file on disk. Disabling compression creates larger files on disk.
TIFF	Color Depth	The 8 bits option saves 8-bit files. The 16 bits option saves 16-bit files. The Automatic option saves the image in the same depth as the original loaded image.
	Compression	This setting controls the size of the file on disk. With None, image data is not compressed and can produce large file sizes. RLE (run length encoded) produces relatively small and fairly portable files. JPEG produces files that can vary in size, depending on the quality you have set using the JPEG quality slider. The higher the quality setting, the larger the file size.
	JPEG Quality	This option adjusts the image quality of the JPEG file on a sliding scale from 0 to 100. The higher the number you set, the higher the image quality of the JPEG file.
Wavefront™	Format Type	This option specifies one of two output file formats supported by Wavefront (either RLA or RLB).
	Color Depth	The 8 bits option saves 8-bit files. The 16 bits option saves 16-bit files. The Automatic option saves the image in the same depth as the original loaded image.
	Gamma	This option specifies an adjustment to correct for gamma differences between Macintosh and Windows PC output display. This option is intended for cross-platform applications that require adjustment. *To see if you need to adjust this value, check the documentation that came with your Wavefront application. Usually, you can use the default setting.*

Export Settings: Graphic Format (Continued)

Option	Suboption	Description
XWindows		Developed by the MIT X Consortium, and is supported by many X Window System™ applications on workstations and some personal computers.
YUV	Format	This option controls the video format of saved images. If set to NTSC, NTSC video format (720 x 486) is used. If set to PAL, PAL video format (720 x 576) is used. Images are either padded with black or cropped.
	Smooth YUV	This option enhances the fidelity of images saved in YUV color space (if originating in RGB color space).

P2 Export Settings

The following table describes options available in the P2 Export Settings dialog box.

P2 Export Settings

Option	Description
Use Marks	When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
Use Enabled Tracks	When Use Enabled Tracks is selected, your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
P2 Device	Select the connected P2 device to which you want to export.
Video Format	Select a video format. You can upconvert or downconvert.
Sample Bit Depth	Panasonic supports 16-bit audio at this time.

Export Settings: XDCAM

The following table describes options available in Export Settings: XDCAM.

Export Settings: XDCAM

Option	Description
Use Marks	When Use Marks is selected, the current IN and OUT points in the selected clip or sequence determine starting and ending frames for the export.
Use Enabled Tracks	When Use Enabled Tracks is selected, your Avid editing application uses tracks that are enabled in the Timeline. To export all the tracks in the sequence, deselect this option.
Target XDCAM Disk	Select the connected XDCAM disk to which you want to export.
Video Format	Select a video format. You can upconvert or downconvert.
Sample Bit Depth	Select one of the following: • **16 bit:** When this option is selected, your Avid editing application exports a 16-bit audio sample depth (currently the industry-standard bit rate for audio). • **24 bit:** When this option is selected, your Avid editing application exports a 24-bit audio sample depth for work with higher resolution audio.

Film and 24P Settings

The following table describes options available in Film and 24P Settings.

Film and 24P Settings

Option	Description
Edit Play Rate	Select the play rate for your project. *Edit play rate options differ for PAL and NTSC projects.*
Master Default Film Type	Select one of these industry-standard film types to meet your production lab standards and your film type for your master.
Master Default Edge Type	Select the edge type for the master display in bins and cut lists.
Ink Number Default Film Type	Select one of these industry-standard ink number film types to meet your production lab standards and your film type.
Ink Number Default Edge Type	Select the edge type for the ink number display in bins and cut lists.

Film and 24P Settings (Continued)

Option	Description
Auxiliary Ink Default Film Type	Select the film type for a second ink number (this is useful for tracking additional information for different film gauges). The choices are the same as for Ink Number Default Film Type.
Auxiliary Ink Default Edge Type	Select the format for the auxiliary ink number edge type. The choices are the same as for Ink Number Default Edge Type.
Video Pulldown Cadence (NTSC only)	Specify how the Avid application handles pulldown. The choices are: **Video Rate, no pulldown**. For 24-fps footage transferred MOS (without sound) to 30 fps by speeding up the film and using audio brought into the Avid system separately at 100% of the actual speed. **Standard 2:3:2:3 pulldown**. For 24-fps footage transferred to 30 fps using Standard Pulldown with the audio synchronized to the picture. **Advanced 2:3:3:2 pulldown**. For 24-fps footage recorded to 60 fields (NTSC) using Advanced Pulldown with the audio synchronized to the picture.
Audio Transfer Rate (PAL only)	Set the transfer rate for audio in 24p PAL film projects. The choices are: **Film Rate (100%)**. For 24-fps film footage transferred MOS to 25 fps by speeding up film with the audio coming in separately at 100% of the actual speed. **Video Rate (100%+)**. For 24-fps film footage transferred to 25 fps by speeding up the film with the audio synchronized to the video picture. *It is important to keep the audio transfer rate constant for the project.*
Audio Source Tape TC Rate (NTSC only)	Select the source audio rate. The choices are: 30 fps 29.97 fps
Set Pulldown Phase of Timecode (NTSC only)	Set a default pulldown phase for a 23.976p or 24p NTSC project.

Full Screen Playback Settings

The following table describes options available in Full Screen Playback Settings.

Full Screen Playback Settings

Option	Description
Scaling	Select the desired scaling. • **Project** uses the actual project type and monitor aspect ratio to determine the scaling • **4x3** (Standard) If you are editing an HD project that contains a lot of SD material that is being stretched to fit the 16x9 aspect ratio, you might want to select this scaling option, letting you restore its original aspect ratio. • **16x9** (Widescreen) If you are in a 4x3 SD project, working with actual wide-screen material (such as 16x9 material captured by a DV Camcorder), you can select this option to display the material as 16x9 wide-screen. • **Raw Pixel** allows you to see the frame in the full screen window, pixel for pixel, with no scaling. If the image is larger, it is scaled to fit the screen. This is only useful when viewing SD in which pixels are non-square. Raw Pixel Aspect ratio is slightly wider than 4x3.
Full Screen	By default, Full Screen is enabled. Disable this option to view the video on the full screen window with as little scaling as possible. Your Avid editing application will try to display the image at its native height, and then match the width of the height using the Aspect Ratio selection from above. Turning off Full Screen and working in Draft quality (green/yellow) mode or Best Performance (yellow/yellow) mode can also improve performance with some older video cards which do not have the highest pixel shader processing power.
Display Both Fields	Select this option when your Avid editing application is connected to an interlaced display. If a progressive display (for example, an LCD monitor) is connected to the graphic card's video output and you select this option, toothcombing will appear in an interlaced image.
Current Monitor Position	You can choose the monitor where you want to see the full screen playback. Drag the entire Full Screen Playback Settings dialog box to the desired monitor, and then click Select Monitor. (Macintosh only) If two or more graphics cards are installed, choose a monitor that is connected to the primary graphics adapter.

For information on using Full Screen Play, see “Playing Video to a Full-Screen Monitor” in the Help.

General Settings

The following table describes options available in General Settings.

General Settings

Option	Description
Project Format	This option displays the format currently selected for the project (NTSC or PAL). You cannot change it.
Temporary File Directory	When you use the Drag and Drop Export or an export that creates an intermediate movie file, your Avid editing application must store the intermediate file, which can be as large as the final export. By default, the Temporary File Directory is located in the same directory as your Avid editing application. To improve efficiency or to avoid DISK_FULL errors when exporting, you can type in a different directory for these temporary files. The ideal setting for this field is to type in a directory on the drive to which you are exporting, or simply one with plenty of free space.
Default Starting TC	This option specifies the timecode value you want your Avid editing application to use as the default starting timecode for each new sequence.
Default Starting EC	This option specifies the edgecode value you want your Avid editing application to use as the default starting edgecode for each new sequence.
Effect Apertures	The Effect Apertures option allows you to control the number of horizontal lines of an image that are used to create an effect. DV25: Select this option when you are using DV media exclusively. For more information, see “Effect Aperture” in the Help. ITU 601 (default): Select this option when you are using uncompressed media or mixed resolutions.
NTSC Has Setup	This option allows systems using NTSC-EIAJ to use the correct color mapping. NTSC-EIAJ users should not select this option. All other users should select this option.
Use Windows compatible file names (Macintosh only)	Prevents you from using the characters /\:*?”<>| and adding leading spaces, trailing spaces, or a trailing period in bin, project, or user names. These characters are not allowed in Windows file names. This option is useful for moving bins and projects from Macintosh to Windows platforms.

General Settings (Continued)

Option	Description
Allow file names to exceed 27 characters (Macintosh only)	Lets you override the Windows file name limit of 27 characters (not including the four characters reserved for the file type extension). Set this option if you do not plan to move your bins or projects to a Windows system, and if you want to use file names longer than 27 characters.
Generate LTC On Playback	This option allows you to output LTC timecode through the Adrenaline hardware.For more information, see “Using LTC Timecode for Output” in the Help.

Grid Settings

The following topics describe the options available in the Grid Settings dialog box.

Grid Settings: Coordinates Tab

The following table describes options available in Grid Settings: Coordinates tab.

Grid Settings Options (Coordinates Tab)

Option	Suboption	Description
Scale Mode	Normal 4:3 Inside 16:9 Monitor 4:3 Outside 16:9 Monitor 1.66 Inside 4:3 1.77 Inside 4:3 1.85 Inside 4:3	This setting allows you to work with a grid that indicates boundaries for a format other than the one in which you are working. This is useful when you are creating graphics (like titles) that must remain safe in other formats. Select the appropriate option for the current and target formats you need. When you do not specifically need a grid that represents another format, use the Normal option, which is the default.
Increments		
	Fields	Sets the number of tick marks along the grid axes as well as the number of visible grid points. The default value is 12.

Grid Settings Options (Coordinates Tab) (Continued)

Option	Suboption	Description
	Sub Fields	Sets the number of divisions between visible grid points for the snap-to-grid feature. Setting Sub Fields to 1 snaps objects to visible points only. A value of 2 provides 1/2-field jumps. A value of 4 (the default value) provides 1/4-field jumps, and so on. Setting Sub Fields to 0 turns off the snap-to-grid feature.
Source Scan Size		For film projects, where an optical house scans film for the addition of visual effects.
	Hor. Size	The default values are 720 x 486 pixels.
	Vert. Size	
Source Grid Adjustments		
	Hor. Offset	Moves the grid on the image. These values are intended mainly for film projects.
	Vert. Offset	
	Inset	Shrinks the grid proportionally.

Grid Settings: Display Tab

The following table describes options available in Grid Settings: Display tab.

Grid Settings Options (Display Tab)

Option	Suboption	Description
Type	Square Standard Film Academy Super 35 Anamorphic	Selects a different grid for each standard film type. For video projects, use the Square grid type. The grid for the Academy option includes a safety margin on the left that is used for adding the optical sound track.
Color		Sets a color for the grid axes and the grid points.
Show Safe Title		Displays the safe title area. Create video titles within this area to ensure that they are viewable on a regular television screen.
Show Safe Action		Displays the safe action area for video display. This box is self-adjusting for PAL and NTSC projects.
Show 14x9 Zone Show 1.66 Aspect Show 1.85 Aspect Show 1.77 Aspect		Select one or more of these options to display the grid you want.
Show Axes		Displays the grid axes.
Show Tick Marks		Shows tick marks along the axes. Use the Fields parameter to set the number of tick marks.
Show Thirds		Divides the screen into three sections. This is especially useful if you are creating titles for the lower third of the screen.
Show Points		Shows the grid points. Use the Fields parameter to set the number of grid points.
Show Position Info		Displays the position coordinates of any point in the Effect Preview, or Record monitor. Your Avid editing application uses compass coordinates and X, Y coordinates. For compass coordinates, the point (0, 0) is the center of the axes. For X, Y coordinates, the point (0, 0) is the top left corner of the monitor. X values increase to the right, and Y values increase as you move down. For more information, see “Displaying Position Coordinates” in the Help.

Import Settings

The following topics describe options available in Import Settings.

Import Settings: Image Tab

The following table describes options available in the Import Settings: Image tab.

Import Settings: Image Tab

Option	Suboption	Description
Aspect Ratio, Pixel Aspect	601/709, non-square	Select this option to import images with the dimensions used by your Avid editing application: 720 x 480 (NTSC) or 720 x 576 (PAL). Also use this option for 720 x 540 images, or for other images that fit the 4:3 aspect ratio. You can use this option to maintain field data when you import two-field media that follows exact NTSC or PAL dimensions. *HD projects use the ITU-R 709 color space instead of ITU-R 601.* Your Avid editing application converts the existing pixel dimensions, if necessary, so that the image fills the screen. If the aspect ratio of the original frames does not match the 4:3 aspect ratio used by your Avid editing application, the imported frames might appear distorted. For best full-screen resolution of files created in a square-pixel environment, use 648 x 486 (NTSC), 648 x 480 (NTSC DV) or 768 x 576 (PAL). To create a single resolution for both NTSC and PAL, use 720 x 540. *This option is selected by default.*
	Maintain, non-square	Select this option for an image that was created in a non-square-pixel environment, but does not match exact NTSC or PAL dimensions. Maintain, non-square preserves up to 486 (NTSC), 480 (NTSC DV), or 576 (PAL) lines, and either removes additional lines or pads with video black if there are fewer lines. Maintain, non-square never scales or resizes.

Import Settings: Image Tab (Continued)

Option	Suboption	Description
	Maintain, square	Select this option for an image that was created in a square-pixel environment, such as a graphics application. Use this option primarily for icons, logos, and other graphics that cannot be resized and are not intended to fill the entire screen. Your Avid editing application fills the rest of the screen with video black. If the image has an alpha channel, this black is keyed out in the alpha channel. Do not use this option if you are importing: • Images in the 720 x 480 (NTSC DV), 720 x 486 (NTSC) or 720 x 576 (PAL) non-square-pixel dimensions • A full-screen square-pixel image that has already been stretched to non-square-pixel dimensions
	Maintain and Resize, square	Select this option for an image that was created in square-pixel terms. Your Avid editing application fits the longest dimension to the screen size and fills in the missing pixels in the shorter dimension with video black, creating a border. If the image has an alpha channel, this black is keyed out in the alpha channel. For example, a 540 x 300 image would have its longer dimension resized to 720, and the shorter dimension resized in proportion (to 400). The remaining “short side” pixels are replaced with black. For best full-screen resolution of files created in a square-pixel environment, use 648 x 480 (NTSC) or 768 x 576 (PAL). To create a single resolution for both NTSC and PAL, use 720 x 540. Do not use this option if you are importing: • Images in the 720 x 480 (NTSC DV), 720 x 486 (NTSC) or 720 x 576 (PAL) non-square-pixel dimensions • A full-screen square-pixel image that has already been stretched to non-square-pixel dimensions

Import Settings: Image Tab (Continued)

Option	Suboption	Description
File Field Order		This section allows you to select the field ordering (sometimes referred to as field dominance) of the media you are importing. For 23.976p, 24p, or 25p projects, these options do not appear; all fields are automatically exported as progressive (still) frames. When the field ordering (or spatial field position) of the imported media matches the field ordering of the project format, no special processing is required. For more information, see "Field Ordering in Graphic Imports and Exports" on page 752. This setting does not apply to OMFI imports when the import resolution matches the OMFI file.
	Non-interlaced	This option allows you to import still images to all formats without concern for the temporal ordering of the fields. *This is the default value.*
	Odd (Upper Field First)	Select this option for the odd field to occur temporally first during import. The first line in the image belongs to the odd field.
	Even (Lower Field First)	Select this option for the even field to occur temporally first during import. The first line in the image belongs to the even field.
Color Levels	RGB	Select this option if the imported graphics file uses RGB graphics levels. Most computer-generated graphics use RGB graphics levels. The RGB color values are remapped to ITU-R 601 (formerly CCIR 601) or ITU-R 709 video color values appropriate for the Avid system.
	RGB, dithered	Select this option if the imported graphics file uses complex color effects, such as a gradation, and you are importing at a high resolution (2:1). Do not use this option to reimport an image that has already been imported with dithering.
	601/709	Select this option if the imported graphics file uses video levels based on the ITU-R 601 (formerly CCIR 601) or ITU-R 709 (HD) standard. These graphics include Avid color bars or images that include superblack (zero black) for keying purposes.
Alpha	Use Existing	Select this option to import the image, using the existing alpha channel information.
	Invert Existing	Select this option to reverse the black and white elements of the alpha channel if they differ from the matte key requirements of your Avid editing application: a white background, a black foreground, and a gray transparency blend between the two.

Import Settings: Image Tab (Continued)

Option	Suboption	Description
	Ignore	Select this option to import an image that contains alpha channel transparency information as one opaque graphic. The imported graphic appears as a single master clip in the bin. *If an image contains an embedded alpha channel but your Avid editing application does not support alpha channel import for the file type, select this option to import the image successfully. For information on alpha channel support, see "Import Specifications for Supported Graphics File Formats" on page 738.*
Single Frame Import	Duration *n* seconds	Select this option to specify the duration of the single frame created from the import. The default is 10 seconds. This option does not apply to importing sequential image files because each file represents one frame of the clip; therefore, the total number of files determines the total duration. Importing an image with alpha channel creates a matte key effect as a single frame, with no associated media file. Importing as a single frame takes less time and requires less storage than importing as a media file. However, a single frame has limited real-time playback capabilities, particularly at high resolutions. This occurs because your Avid editing application loads the frame into memory and handles it in real time, rather than playing it back from a disk.
Autodetect Sequential Files		Select this option if you are importing sequential files and you want your Avid editing application to recognize that a sequence of connected files is present and to automatically import the whole sequence. When this option is deselected, your Avid editing application does not automatically import a whole sequence of files that have sequential extensions. You can then select any single file for import. You can import sequential files for any of the supported still-image formats. For information on preparing a sequence of image files, see "Animation Files" on page 744.

Import Settings: OMFI Tab

The following table describes options available in the Import Settings: OMFI tab.

Import Setting: OMFI Tab

Option	Description
Resolution	
Use the source file's resolution.	Select this option to maintain the source file's resolution. Your Avid editing application disregards the resolution setting in the Select Files to Import dialog box as well as the resolution set in the Import tab of the Media Creation dialog box.
Use the current import resolution.	Select this option to use the current import resolution setting. Your Avid editing application disregards the source file resolution.
Ask me to set the resolution for each file that is different from the current import resolution setting.	Select this option to have your Avid editing application display a query about resolution selection for each imported file when the resolution of the source file is different from the current import resolution setting.

Import Settings: Shot Log Tab

The following table describes options available in the Import Settings: Shot Log tab.

Import Setting: Shot Log Tab

Option	Description
Events	
Maintain events as logged.	Select this option to maintain all events as originally logged.
Combine events based on scene and automatically create subclips.	Select this option to combine all the events for a scene into a single master clip and then link the master clip to subclips that represent the original events for that scene. To use this option, you must have scene numbers logged in a scene column in the bin.
Combine events based on camera roll and automatically create subclips.	Select this option to combine all the events from a camera roll into a single master clip and then link the master clip to subclips that represent the original events for that camera roll. To use this option, you must have camera roll numbers logged in a camera roll column in the bin for a film project.

Import Setting: Shot Log Tab (Continued)

Option	Description
Merge events with known sources and automatically create subclips.	Select this option to create subclips for events that are merged or relinked to their source clips upon import. Use this option if you have already entered master clips in a bin for each camera roll or master scene, and have subsequently logged all the events related to those clips for import. *You must select the clips that you want to merge before selecting this option.*
Merge events with known master clips.	Select this option to merge information in the shot log onto selected master clips based on the matching tape name. Use this option if you have already logged (or captured) master clips in a bin for each take. *You must select the clips that you want to merge before selecting this option.*

Import Settings: Audio Tab

The following table describes options available in the Import Settings: Audio tab.

Import Settings: Audio Tab

Option	Suboption	Description
Sample Rate:	Convert source sample rate to project sample rate on import	Select this option to convert incoming media to the sample rate of the current project (deselected by default). Deselect this option to import audio media at the source sample rate. If your Avid editing application does not support the source sample rate, your application autoconverts it to the current project sample rate.
	Convert source sample rates with audio pull-up or pull-down to project sample rate on import	Select this option to convert incoming media marked with pull-up or pull-down sample rates to the sample rate of the current project (deselected by default). Deselect this option to import audio media at the source sample pull-up or pull-down rate, but with the file marked at a rate your Avid editing application supports.
Sample Bit Depth:	Convert source sample bit depth to project sample bit depth on import.	Select this option to covert the incoming media to the bit depth of the current project (deselected by default). Deselect this option to import audio media at the source sample bit depth. If your Avid editing application does not support the source sample bit depth, your application autoconverts it to the current project sample bit depth.

Import Settings: XDCAM Tab

The following table describes options available in the Import Settings: XDCAM tab.

Import Settings: XDCAM Tab

Option	Description
Force import of both Proxy & High-resolution	Select this option to import both proxy and high-resolution versions of the selected file or files. If this option is not selected, only the selected files (proxy or high-resolution) are imported. Proxy files are imported first.
Only import clips with Good Shot Flag	Select this option to restrict XDCAM imports to only those clips described with the OK or KP (keep) flag. You can flag clips with these and other descriptive values in the Sony proxy browser software.
Batch import High-resolution Video	Select this option if you want to use the Batch Import function to import high-resolution media from the XDCAM device and automatically conform it with the low-resolution proxy media.
• Handle Length: *nn* Frames	Type the number of frames you want to use as handles for batch imported clips. Handles refer to material outside the IN and OUT points and are used for dissolves and trims with the new, shorter master clips. The default is 30.
Automatically import Proxies when disk is inserted	Select this option if you want to import all proxy media stored on the XDCAM disc when the disc is inserted in the XDCAM device. Deselect this option if you want to import only selected media files.
Import Essence Marks as Locators	Select this option to import XDCAM Essence Marks as locators that can be displayed in the Source/Record monitor or in the Locators Window.
Convert Proxy Audio to Project Rate during Import	Select this option if you want to convert the sample rate for proxy media (8 kHz) to the project rate when you import the media. The option is selected by default.
Import Audio Channels	Select this option to set the maximum number of audio channels to import: 2, 4, 6, or 8. For example, if a file has 8 channels of audio, you can select 8 to import all 8 channels or you can select 2 and only the first 2 channels of audio will be imported.

Interface Settings

The following topics describe options available in Interface Settings.

Interface Settings: General Tab

The following table describes options available in the Interface Settings: General tab.

Interface Settings: General Tab

Option	Description
Show Labels in Tool Palette	When you select this option, your Avid editing application displays text labels with the icons on the Tool palette. This is the default option.
Show ToolTips	When you select this option, your Avid editing application displays labels for buttons and icons when you position the mouse pointer over them. This is the default option. You can also turn ToolTips on and off from the Help menu.
Delay *n* seconds before showing	If you select Show ToolTips, you can delay the label display by entering a value in this text box. A delay allows you to move the mouse pointer across the interface without displaying the labels on items between the starting point and the destination of the mouse pointer.
Windows Standard Alt Key Behavior (Windows only)	This option switches between standard Windows Alt key behavior and Avid system Alt key behavior. When you select this option, pressing and holding the Alt key together with another key works as a keyboard shortcut for certain Windows actions (for example, opening menus). When you deselect this option, pressing and releasing the Alt key and then pressing another key works as the Windows keyboard shortcut, while pressing and holding the Alt key together with another key works as a keyboard shortcut for certain Avid functions. This is the default option. For more information on Windows shortcuts, see the Windows documentation. For more information on Avid shortcuts, select Help > Shortcuts.
Automatic Num Lock Activation (Windows only)	When you select this option, your Avid editing application automatically sets the numeric keypad in numeric mode the next time you start the application. If you deselect this option, the Num Lock key on the keyboard controls the mode of the numeric keypad. With either selection, you can use the Num Lock key to change the mode of the numeric keypad.

Interface Settings: General Tab (Continued)

Option	Description
Automatically Launch Last Project at Startup	Opens your last project when the application starts.

Interface Settings: Appearance Tab

The following table describes options available in the Interface Settings: Appearance tab.

Interface Settings: Appearance Tab

Option	Suboption	Description
Color	Background Button Button Contents Button Highlight Button Spotlight Text Timeline Background Timeline V Tracks Timeline A Tracks Timeline TC Tracks Project Background Bin Default Background	Controls the color of the given interface component. See “Changing Interface Component Colors” on page 56.
Shading Style	Convex Dim Radial Convex Radial Bright Radial	Controls the shading of buttons and toolbars. See “Changing Button and Toolbar Styles” on page 58.
Shading Depth	5% – 50%, in 5% increments	Controls the three-dimensional “rounding” of buttons and toolbars. See “Changing Button and Toolbar Styles” on page 58.

Interface Settings: Appearance Tab (Continued)

Option	Suboption	Description
Monitor Button Separation	Maximum Moderate None	Controls the spacing of the Monitor buttons. See "Changing Button and Toolbar Styles" on page 58.
Timeline Button Separation	Maximum Moderate None	Controls the spacing of the Timeline buttons. See "Changing Button and Toolbar Styles" on page 58.
Button Style	Oval Octagonal Rounded Square Swoosh Antique	Controls the shape of the buttons. See "Changing Button and Toolbar Styles" on page 58.

Interplay Folder Settings

You need to configure your Avid editing application before you can interact with the asset manager. The Interplay Folder dialog box allows you to set the location on the asset manager used for checking in Avid assets. For more information, see the *Avid Interplay Installation Guide*.

The following table describes options available in Interplay Folder Settings.

Interplay Folder Settings

Option	Description
Interplay Root Folder	Lists the default directory for your workgroup project, where the asset manager checks in media assets.
Set	Allows you to navigate to a directory on the Interplay Server and set a new default Interplay Root Folder.
Append project to directory path	Automatically adds the name of your project to the directory path specified in the Interplay Root Folder text box.

Interplay Server Settings

You need to configure your Avid editing application before you can interact with the asset manager. For more information, see the *Avid Interplay Installation Guide*.

The following table describes options available in Interplay Server Settings.

Interplay Server Settings

Option	Description
Interplay Server name	Allows you to enter the computer name of your Interplay Server.

Interplay User Settings

You need to configure your Avid editing application before you can interact with the asset manager. The Interplay User dialog box defines user and login preferences for using the asset manager. For more information, see the *Avid Interplay Installation Guide*.

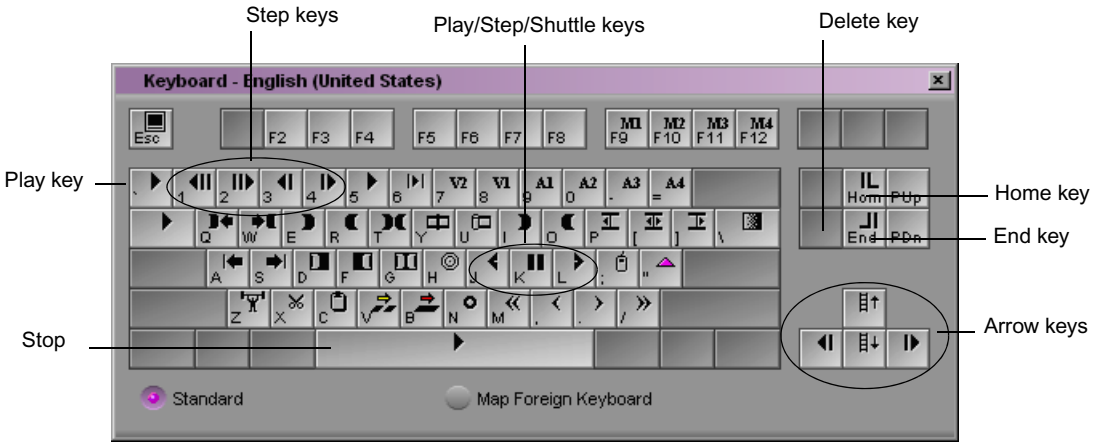
The following table describes options available in Interplay User Settings.

Interplay User Settings

Option	Description
User Name	Allows you to enter a user name. This name must be a known workgroup user.
Automatic Login at Project Selection	Logs you in to the asset manager automatically every time you open a project.
Login/Logout	Connects to or disconnects from asset manager.

Keyboard Settings

The following illustration displays the default keyboard settings.



To view the name of a button in the Keyboard settings window, rest the pointer on the button. To get help for the button, right-click (Windows) or Ctrl+Shift+click (Macintosh) and select What's This?

For information on mapping buttons, see "Mapping User-Selectable Buttons" on page 81.

When you open the Keyboard palette from the Settings list and select Map Foreign Keyboard, you can map user-selectable buttons to the keyboard. If the Windows operating system is set to French or German regional settings, and you click the center of the Enter key in the Keyboard palette, a message box opens that says foreign keyboard mapping mode has been turned off. To return to foreign keyboard mapping mode, Select Standard, and then select Map Foreign Keyboard again.

Marquee Title Settings

The following table describes options available in the Marquee Title Settings. For more information on Marquee, see the *Avid Marquee Title Tool User's Guide* or the Marquee Help.

Marquee Title Settings

Option	Suboption	Description
Create New Title using		
	Marquee	Your Avid editing application always opens Marquee when you select Clip > New Title or Tools > Title Tool.
	Title Tool	Your Avid editing application always opens the Title Tool when you select Clip > New Title or Tools > Title Tool.
	Ask me	Your Avid editing application displays the New Title dialog box when you select Clip > New Title or Tools > Title Tool. You can then select either Marquee or the Title Tool. This is the default setting.
Promote Title Tool titles to Marquee		
	Yes	Your Avid editing application always promotes a Title Tool title to a Marquee title when you open the title for editing from a bin or from within a sequence. For more information, see "Promoting Title Tool Titles to Marquee" in the Marquee Help.
	No	Your Avid editing application never promotes a Title Tool title to a Marquee title when you open the title for editing from a bin or from within a sequence.
	Ask me	Your Avid editing application displays the Edit Title dialog box when you open a title for editing from a bin or from within a sequence. You can then choose whether to promote the title to Marquee. This is the default setting.
Backup Title on Promote		When this option is selected, your Avid editing application creates a backup Title Tool version of any title that it promotes to Marquee. The backup copy is a fast-saved (unrendered) title. Your Avid editing application adds [TT] to the name of the backup copy to differentiate it from the newly created Marquee version.

Media Creation Settings

The following topics describe adjusting the Media Creation settings.

For more information about options in the Media Creation Settings dialog box, see "Selecting Video Resolutions and Media Drives" in the Help.

Media Creation Settings: Drive Filtering & Indexing Tab

The following table describes options available in the Media Creation Settings: Drive Filtering & Indexing tab.

Media Creation Settings: Drive Filtering & Indexing Tab

Option	Description
Filter Network Drives Based on Resolution	Removes as a storage choice network drives that cannot support the selected resolution or cannot play back the selected resolution.
Filter Out System Drive	Removes as a storage choice the drive on which the operating system resides.
Filter Out Launch Drive	Removes as a storage choice the drive on which your Avid editing application resides.
Auto-index local drives as they come online (using filtering rules)	Enables automatic indexing of local drives by the Media Indexer, a background service that keeps track of the media files in storage locations that you identify. Auto-indexing uses filtering selections on the left side of the tab, so that if you have selected "Filter Out System Drive," any media on that drive will not be indexed. For more information about configuring the Media Indexer, see the *Avid Interplay Software Installation Guide*.
Manual Storage Scan	Enables immediate indexing of local drives by the Media Indexer. If the Auto-index option is turned off, you can click this button to index local drives and folders. You can then use the Interplay Service Configuration tool to remove specific drives or folders, if desired.
On indexing failure	Determines how indexing failure messages are reported. For information on using the Console, see "Using the Console Window" on page 85.

Media Creation Settings: Capture, Titles, Import, and Mixdown & Transcode Tabs

The following table describes the options in the Capture tab, Titles tab, Import tab, and Mixdown & Transcode tab, and Media Type tab of the Media Creation dialog box.

Media Creation Settings: Capture, Titles, Import, and Mixdown & Transcode Tabs

Option	Description
Video Resolution	Select a resolution.
Apply to All	This sets your chosen resolution for all the Media Creation dialog box tabs. It also sets it for any place in the application where you select a resolution.
Video/Audio Drive	Select a drive or drives. In the Titles tab, only a Video Drive option is available.
Apply to All	This sets your chosen video and audio drives for all the Media Creation dialog box tabs. It also sets them for any place in the application where you select drives.

Media Creation Settings: Motion Effects Tab

The following table describes the options in the Motion Effects tab of the Media Creation dialog box.

Media Creation Settings: Motion Effects Tab

Option	Description
Video Drive	Select a drive or drives
Apply to All	This sets your chosen video drives for all the Media Creation dialog box tabs. It also sets them for any place in the application where you select drives.

Media Creation Settings: Render Tab

The following table describes options available in the Media Creation Settings: Render tab.

Media Creation Settings: Render Tab

Option	Suboption	Description
Video Resolution		Select a resolution for the rendered effects. *The application always renders an effect at the highest resolution used in the effect source clips.*
Apply to All		This sets your chosen resolution for all the Media Creation dialog box tabs. It also sets it for any place in the application where you select a resolution.
Video/Audio Drive		Select a drive or drives.
Apply to All		This sets your chosen video and audio drives for all the Media Creation dialog box tabs. It also sets them for any place in the application where you select drives.
Same as Source		Select this option if you want the application to render the effect using the resolution of the clip or clips used to create the effect. If an effect is created from clips that use different resolutions, the application uses the highest quality resolution.
Effects Processing	8-bit	Select this option when rendering time is more important than image quality. Also use this option if you are mainly working with effects that don't support 16-bit precision.
	16-bit	Select this option for the best overall image quality. Use this option if you use 10-bit resolutions, use many levels of nested effects, or want the best color fidelity for rendered effects.
	Automatic	Select this option if you want the media source to determine the effects resolution. This is the default.

Media Creation Settings: Media Type Tab

The following table describes the options in the Media Type tab of the Media Creation dialog box.

Media Creation Settings: Media Type Tab

Option	Description
Video File Format	Select a file format: Open Media Format (OMF) or Material Exchange Format (MXF). This setting applies to all video format menus (in the Capture tool, the Consolidate/Transcode dialog box, and other places in your Avid editing application). For more information, see "File Format Specifications" on page 735. *If your project uses an HD resolution, you cannot select OMF as a file format. MXF is selected by default.*
File Format (Media Type tab only)	Select a file format: Open Media Format (OMF) or Material Exchange Format (MXF). This setting applies to all video format menus (in the Capture tool, the Consolidate/Transcode dialog box, and other places in your Avid editing application). For more information, see "File Format Specifications" on page 735. *If your project uses an HD resolution, you cannot select OMF as a file format. MXF is selected by default.*

Media Services Settings (Windows Only)

The Media Services Settings dialog box allows you to connect to a Media Services Broker. The services provided by Avid Interplay Media Services Broker are used in an Avid Interplay environment where dedicated computers automate time-consuming operations. For more information, see the *Avid Interplay Media Services Setup and User's Guide*.

The following table describes options available in Media Services Settings.

Media Services Settings

Option	Description
Media Services Broker is available	Select to make sure you are connected to the Media Services Broker. You can deselect this option to disconnect without losing your setting information.
Media Services Broker	Type the Broker name as it appears in the Media Services Broker application window. For example: http:\\myBrokerPC:8080 You may need to check with your Media Services Broker administrator for this information.
Username	Type your Media Services Broker username.
Password	Type your Media Services Broker account password.
Shared Storage	Type the directory where you intend to save the QuickTime reference movie created by the service. You can click the Browse button to locate the directory.
Email address	(Option) If you select "Notify me of job completion by email." Type your e-mail address. *You can also check the Avid Interplay Media Services Broker Jobs window to see the status of your job.*

Mouse Settings

The following table describes options available in Mouse Settings.

Mouse Settings

Option	Suboption	Description
Scroll Wheel Behavior	Vertical Scroll Speed menu	Selects the speed of scrolling with the mouse wheel within your Avid editing application — Normal, Moderate, or Fast. For more information, see “Mouse Scroll Wheel Support” in the Help.
Mouse Button Assignments		Assigns functions to three additional mouse buttons.

PortServer Settings

The following table describes options available in PortServer Settings.

PortServer Settings

Option	Description
Auto-connect to LANshare at Launch	LANshare workspaces are recognized when you start your Avid editing application.
Connect/Disconnect	Starts or terminates the connection.

Remote Play and Capture Settings

Remote Play and Capture allows you to use your Avid editing application like a videotape recorder (VTR) or edit controller, giving you access to some of the features of an external editing suite through your Avid editing application interface.

The following table describes options available in Remote Play and Capture Settings.

Remote Play and Capture Settings

Option	Description
Mode	Use Remote Capture when you want to perform a quick capture. This mode is also known as *crash record*. It allows your Avid editing application to capture the media being sent to it immediately without setting up parameters like IN and OUT points. Remote Capture supports record and stop with the controller. Use Remote Play when you want to control sequences via an edit controller. Remote Play supports play, cue, and stop. Use Remote Punch-In when you want to perform a quick audio punch-in. Remote Punch-In allows your Avid editing application to record the audio being sent to it immediately without setting up all parameters, such as OUT points. Remote Punch-In supports play, cue, record, and stop with an external controller.
Device Code	Select the device code that identifies the VTR the system will emulate. The edit controller adjusts to this choice. The default value is a Sony PVW-2800, which performs all the common play and capture functions. You do not need to change the device code value unless your edit controller does not recognize the VTR or you want to emulate a specific VTR.
Runup (frames)	This option is only available with Remote Play. Specify the time (measured in frames) it takes the deck to start playing from a cued position. The default value is 1 frame. When the runup times of two video devices are similar, it is easier for the edit controller to synchronize the devices during preroll. If your Avid VTR does not sync up as often as you want, try adjusting this value so the two devices attain full speed at nearly the same time.

Remote Play and Capture Settings (Continued)

Option	Description
Inhibit preloading when cueing by single frame.	This option is only available with Remote Play and Remote Punch-In. Avid recommends that you do not inhibit preloading under normal circumstances. Preloading occurs by default in your Avid editing application. It improves playback performance by preparing the digital media for playback each time you cue a new frame. Selecting this option causes your Avid editing application to match the behavior of a tape deck when you step through footage frame by frame. Avid recommends this option only for projects that require quick cueing of one frame after another; for example, when you are using your Avid editing application to present a sequence of still images as in a slide presentation.

Render Settings

The following table describes options available in Render Settings.

Render Settings

Option	Suboption	Description
Render Completion Sound		Sets a sound for your Avid editing application to activate once the rendering process is complete. This is useful when you are rendering multiple effects.
	None	Disables the rendering completion sound. This is the default.
	System Beep	Sets the rendering completion sound to match the sound set for your operating system.
	Render Sound	Sets the rendering completion sound to a customized sound. *On Macintosh systems, several customized sound choices are available.*
Motion Effects Render Using		Determines the processing method when existing motion effects are rendered or rerendered.
	Original Preference	Causes effects to be rendered as whatever type they were when originally created.

Render Settings (Continued)

Option	Suboption	Description
	Duplicated Field	Displays a single field in the effect. For two-field media, this reduces the information stored by half because it drops one field of the image, resulting in a lower quality image. For single-field media, this is usually the best choice because of its speed (the other options do not improve effect quality for single-field media). With JFIF resolutions, selecting this option causes the effect to render in the shortest amount of time. With DV and MPEG resolutions, the effect renders approximately as quickly as it would if you selected Both Fields as the rendering option. You can use this option to remove unwanted field motion in interlaced material brought into a progressive project.
	Both Fields	Displays both fields in the effect. For example, the first two frames of a half-speed (50%) slow-motion effect repeat the original Frame 1 (both fields) twice. This option is good for shots without inter-field motion, NTSC or PAL film-to-tape transfers, and still shots. With footage that includes inter-field motion, this method might result in minor shifting or bumping of the image because it disturbs the original order of fields: a Field 1 will appear both before *and* after the corresponding Field 2. The effect renders relatively quickly. For best results, you should use evenly divisible frame rates with this option.
	Interpolated Field	Creates a second field for the effect by combining scan line pairs from the first field in the original media. This option calculates the motion effect at the field level rather than the frame level. Because your Avid editing application considers all fields and does not disturb the original order of fields, the smoothest effect results. Effects created using this option take the longest amount of time to render.

Render Settings (Continued)

Option	Suboption	Description
	VTR-Style	Creates a second field for the effect by shifting selected video fields of the original media by a full scan line. This technique is similar to that used by high-quality professional video decks when playing footage at less than normal speed. This option also creates the motion effect at the field level rather than the frame level; however, because pixels are not filtered, the final image is sharper than that created by the Interpolated Field option. The image might display some slight jitter at certain speeds. The time needed to render effects created with this option is longer than the time for effects created using either Duplicated Field or Both Fields but similar to the time needed for Interpolated Field.
Timewarps Render Using	Original Preference Duplicated Field Both Fields Interpolated Field VTR-Style	Select an option to determine the processing method when Timewarp effects are rendered or rerendered. These rendering options are the same as those for Motion Effects Render Using. See the preceding descriptions.
	Blended Interpolated	Your Avid editing application blends, or averages, pixels from the original frames or fields to create intermediate frames or fields. For example, at 25% speed, your Avid editing application creates three blended images between outgoing Image A and incoming Image B. The first blended image weights the pixels from Image A at 75% and Image B at 25%. The second blended image weights the pixels from Image A at 50% and Image B at 50%. The third blended image weights the pixels from Image A at 25% and Image B at 75%. Objects in motion from Image A to Image B appear to fade out of Image A and fade in to Image B. Timewarp effects created using Blended Interpolated or Blended VTR render less quickly than Interpolated Field or VTR-Style.

Render Settings (Continued)

Option	Suboption	Description
	Blended VTR	Your Avid editing application first creates a second field for the effect by shifting selected video fields of the original media by a full scan line. Then it blends, or averages, pixels from the original frames or fields to create intermediate frames or fields. For example, at 25% speed, your Avid editing application creates three blended images between outgoing Image A and incoming Image B. The first blended image weights the pixels from Image A at 75% and Image B at 25%. The second blended image weights the pixels from Image A at 50% and Image B at 50%. The third blended image weights the pixels from Image A at 25% and Image B at 75%. Objects in motion from Image A to Image B appear to fade out of Image A and fade in to Image B. Timewarp effects created using Blended Interpolated or Blended VTR render less quickly than Interpolated Field or VTR-Style.
Effects Quality Render Using		Sets a global override for effects that have HQ (Highest Quality) software implementations. You select the HQ implementation or the standard implementation for individual effects by clicking the HQ button in the Effect Editor.
	Quality Set in Each Effect	Causes effects to render at the quality determined by the HQ setting in the individual effects. This is the default.
	Standard Quality	Causes all effects to render with the standard implementation.
	Highest Quality	Effects render with the HQ implementation, if one exists for a given effect. If an HQ implementation does not exist for a given effect, the effect renders with the standard implementation.

Safe Colors Settings

The following table describes options available in Safe Colors Settings.

Safe Colors Settings

Option	Description
Composite	Sets safe color values for the composite video signal.
Luminance	Sets safe color values based on brightness.
RGB Gamut	Sets safe color values based on color range.
Units buttons	Define the units of measurement for the three types of safe color values. The Composite Units menu allows you to select either **IRE** or **mVolts** (millivolts). The Luminance and RGB Gamut menus allow you to select from the following options: **8 Bit** — Measures the adjustment on a scale from 0 to 255. *The RGB value for a color in the Color Correction tool will not be identical to the RGB value for the same color in a graphics application such as Adobe Photoshop. For example, the 8-bit RGB values for reference black and reference white are 16 and 235 respectively.* **% —** Measures the adjustment on a percentage scale from 0 to 100. **IRE —** Measures the adjustment in IRE units. **mVolts —** Measures the adjustment in millivolts.
Actions buttons	Define how your Avid editing application implements the safe color settings. The top menu controls both the Composite and the Luminance limit types; the bottom menu controls the RGB Gamut limit type. Each Actions menu allows you to select from the following options: **Ignore** — The system does not limit based on these settings. This is the default setting. **Warn** — The system provides warnings when these limits are exceeded. For more information on safe color warnings, see “Understanding Safe Color Warnings” in the Help.

Script Settings

The following table describes options available in Script Settings.

Script Settings

Option	Description
Font	This option selects the font for imported scripts.
Size	This option selects the font size. The default is 12 points.
Left Margin (pixels)	This option specifies the left margin size. The default is 40 pixels.
Take Coloring	This option specifies the color that your Avid editing application will apply to takes.
Show Frames	When this option is selected, your Avid editing application shows frames in take slates.
Show All Takes	When this option is selected, your Avid editing application shows all takes in each slate. If you deselect this option, your Avid editing application displays only one take per slate.
Interpolate Position	When this option is selected, you can click in a take line within a script, and the image in the Source pop-up monitor updates to the approximate position in the take where you have clicked. If you deselect this option, the Source pop-up monitor does not respond when you click in a take line.
Hold Slates Onscreen	Set this option to keep the slates on the screen when you scroll through a script in the Script window. Each slate remains on the screen as long as the take lines to which it is linked remain on the screen.

Sound Card Configuration Settings (Windows Only)

The following table describes the options available in the Sound Card Configuration Settings dialog box. This settings option is only available in software-only configurations.

Sound Card Configuration Settings

Options	Suboption	Description
Record/Input list		Lists the input sources available with the audio hardware installed on your system.
Playback/Output list	*Audio output sources* <No Match>	Maps input sources to the output sources available with the audio hardware installed on your system. The options available on your system determine which sources are listed as sub-options. *Select the <No Match> option if you do not want an input source mapped to an output source.*
Override Source menu	*Audio output sources*	Allows you to override settings made by your Avid editing application and to accept the default settings of the Windows Master Volume control. The options available on your system determine which sources are listed as sub-options.
Use Windows Mixer		Select this option to deselect all options in the dialog box and allow the Windows mixer to map input sources to output sources.
Audio device name		Lists the sound card installed on your system.

Timeline Settings

The following topics describe options available in Timeline Settings.

Timeline Settings: Display Tab

The following table describes options available in Timeline Settings: Display tab.

Timeline Settings: Display Tab

Option	Description
Show Toolbar	Displays the Timeline top toolbar.
Show Marked Region	Highlights the region from the IN point to the OUT point.
Show Marked Waveforms	Shows waveforms drawn between an IN point and an OUT point instead of over the entire composition.
Scroll While Playing	Scrolls over the position indicator while you play a sequence.
Highlight Suggested Render Areas After Playback	This option allows you to display thin colored indicator lines in the Timecode track of the Timeline. These thin colored lines display information about the real-time effects in your sequence. For more information, see “Real-Time Playback of Video Effects” in the Help.
Show Position Bar	When this option is selected, the blue position bar is displayed in the Timeline.
Show Effect Contents	When this option is selected, your Avid editing application displays effect information.
Double-Click to Show Nesting	When this option is selected, your Avid editing application allows you to double-click segments in the Timeline to display the nested effects.
Show Four-Frame Display	When this option is selected, your Avid editing application shows the head and tail of incoming or outgoing frames of video when you drag a segment.

Timeline Settings: Edit Tab

The following table describes options available in Timeline Settings: Edit tab.

Timeline Settings Options (Edit Tab)

Option	Description
Start Filler Duration	Type a default duration for the filler added at the start of a sequence. For more information, see “Adding Filler” in the Help.
Find Flash Frames Shorter Than *n* frames	Type the maximum number of flash frames you want your Avid editing application to detect. The default is 10, which tells your Avid editing application to detect clips with 9 frames or fewer. See “Finding Black Holes and Flash Frames” on page 380.
Auto-Patching	When this option is selected, your Avid editing application automatically patches the enabled source tracks to the tracks enabled in the Timeline sequence.
Auto-Monitoring	When this option is selected, the track you patch to is monitored. This option is selected by default.
Segment Drag Sync Locks	When this option is set and you click the Sync Lock buttons in the Track Selector panel, you can drag clips in Segment mode while maintaining audio and video synchronization. Your Avid editing application adds filler where necessary. For more information, see “Maintaining Sync in Segment Mode” in the Help.
Default Snap-To Edit	Allows a clip, when dragged from a bin to the Timeline, to either snap to a transition point or move freely on the track. If the option is selected, the clip snaps to an existing transition endpoint. If the option is deselected, the clip moves freely to any position on the track.
New Sequences	Allows you to set the number of video and audio tracks displayed in the Timeline for new sequences. You can select a maximum of 24 video tracks and 24 audio tracks.
Dupe Detection Handles	Select the size of the handles, in frames, to use for dupe checking. The chosen number of frames is added at the beginning and the end of each clip before checking for overlap. The handles are used only for internal calculations.

Trim Settings

The following topics describe options available in Trim Settings.

Trim Settings: Play Loop Tab

The following table describes options available in the Timeline Settings: Play Loop tab.

Trim Settings: Play Loop Tab

Option	Description
Preroll	Allows you to type a preroll value for a playback loop.
Postroll	Allows you to type a postroll value for a playback loop.
Intermission	Allows you to type a transition effect duration for a playback loop.

Trim Settings: Features Tab

The following table describes options available in the Timeline Settings: Features tab.

Trim Settings: Features Tab

Option	Description
Never use Small Trim mode	Sets your Avid editing application to enter Big Trim mode when you perform any operation that activates Trim mode. In Big Trim mode, both Source and Record monitors are replaced by displays of outgoing and incoming frames.
“Go to Transition” uses Small Trim mode	Sets your Avid editing application to enter Small Trim mode only when you click the Go to Previous or Go to Next button.
Always use Small Trim mode	Sets your Avid editing application to enter Small Trim mode when you perform any operation that activates Trim mode. Small Trim mode leaves the Source monitor display, Information Row displays, user tool palettes, and some Monitor menu functions intact. This option allows you to continue to perform basic editing functions.
Auto focus when entering Trim mode	Sets your Avid editing application to enlarge the Timeline at the transition selected for trimming.
Arrows at selected transitions	Sets your Avid editing application to replace the standard trim rollers with arrows at selected transitions in the Timeline.
Render On-the-Fly	Sets your Avid editing application to display the results of effects as soon as you create them. Note that this can slow down the editing of the sequence.

Trim Settings: Features Tab (Continued)

Option	Description
Dual Image Play	Enables dual-image play while trimming (also known as dual-roller trim). It displays outgoing and incoming frames in real time while you trim your edit (adding or shaving the same number of frames on both sides of a transition).

Video Display Settings

The following table describes options available in Video Display Settings.

Video Display Settings

Option	Suboption	Description
DV Output Setting (not applicable to DV devices connected to an Avid Adrenaline or an Avid Mojo)	Output to DV Device	Select this option if you have connected a DV device to a software-only system or an Avid Mojo SDI and you have selected Device > IEEE 1394.
	Format	Available only if you have Output to DV Device selected and a device connected. Allows you to select the compressed format to be sent to the DV device.
	Realtime Encoding	Available only if you have Output to DV Device selected, a device connected, and you are in an SD project. Allows you to enable or disable real-time effects for better performance. For more information, see “Playing Back to a DV Device” in the Help.
10-bit Playback		*This option is only available under certain circumstances when you are using Avid Adrenaline hardware.* Select 10-bit Playback to allow your effects to process using 10-bit components. Deselect this feature and your effects process using 8-bit components, which might result in better performance. For more information, see “Choosing Bit Depth for Effects Processing” in the Help.

Video Display Settings (Continued)

Option	Suboption	Description
Desktop Play Delay (not applicable to DV devices connected to an Avid Adrenaline or Avid Mojo)	frames	Available only if you have connected a DV device to a software-only system or an Avid Mojo SDI and you have selected Device > IEEE 1394. Move the slider to increase or decrease the amount of frame offset in the Composer monitor so that the media on the desktop and the media in the DV device play simultaneously. See "Adjusting the Play Delay Offset" on page 328.
Pre-Filled Frames	Seconds of Video to Pre-Fill: *n* seconds	Type the number of seconds by which to delay the beginning of playback. By accepting a delay at the beginning of playback, you increase the likelihood that your Avid editing application will play the material successfully. The maximum delay you can specify is 10 seconds. See "Prefilling the Video Display Buffer" in the Help.
Open GL® Hardware Preview DVE effects with:	Video boards installed on your system	Select the Open GL board for your video display. For more information, see "Selecting the OpenGL Mode" in the Help.
	Software Open GL	Select the software implementation of Open GL.
Enable Confidence View (also called passthrough)	—	Enable confidence view if you want to view incoming media in the Record monitor while you are capturing. Deselect this option for better performance.
Maximum Real Time Streams	Stream Limit *n*	Select the number of video streams you want the application to use during playback. See "Limiting the Number of Real-Time Streams" in the Help.

Video Input Tool Settings

The following table describes options available in Video Input Tool Settings.

Video Input Tool Settings

Option	Description
Input menu	Lets you select the video input for SD projects: Composite, Component, S-Video, SDI, or DNA-1394. For HD projects, the menu displays HD-SDI. For SD or HD projects, if you are capturing DV media through a 1394 port on your computer, the menu displays Host-1394. For more information, see "Capturing DV Media Directly from a DV Device" in the Help.
Waveform Monitor and Vectorscope Monitor buttons	Opens or hides the Waveform monitor and the Vectorscope monitor. *Your Avid editing application supports the SMPTE/EBU component standard for 625 timing and Betacam component levels for 525 timing. Your application does not support the MII component video standard.*
Sliders	Let you change the value for each setting.
Preset buttons	The preset buttons are highlighted when the factory preset levels are displayed.
SignalLock	This option lets you switch between the following: • Professional — preset sync using a wider bandwidth for non-TBC sources. • Consumer — automatic sync using time-base correctors (TBC) internal to the video source
Settings menu	Lets you save the settings for an individual tape each time you calibrate bars.
100% Bars button	This option is used when the source tape has color bars with 100% (versus 75%) chrominance levels.

Video Output Tool Settings

The Video Output tool has two tabs. For more information on the Video Output settings, see the following topics.

Video Output Tool Settings: SD Tab

The following table describes options available in the Video Output Tool Settings: SD tab.

Video Output Tool Settings: SD Tab

Option	Suboption	Description
Output menu		Lets you select either Component, Composite, or SVideo. • On Adrenaline systems, all outputs on the Avid Adrenaline hardware are active. Select an analog signal from the Output menu to calibrate for output. see “Calibrating for Video Output” in the Help. • On Avid Mojo and Avid Mojo SDI systems, select a signal from the Output menu to switch to the analog output you want.
Hue	SVideo and Composite	An attribution of color perception based on varying proportions of red, green, and blue in the video signal. Also known as *color phase*.
Sat	SVideo and Composite	Saturation: a measurement of chrominance or the intensity of color in the video signal.
SC Phase	SVideo and Composite	Subcarrier phase: The color-burst portion of a composite or S-Video signal used to synchronize the timing of two or more video signals.
Brightness	SVideo and Composite	Brightness is the relative lightness or darkness of the image.
Contrast	SVideo and Composite	The variation of the lightest or brightest in comparison to the darkest portions of the image.

Video Output Tool Settings: SD Tab (Continued)

Option	Suboption	Description
SubPixel HPhase	SVideo, Component and Composite	A fine adjustment of Horizontal phase.
H Phase	SVideo, Component and Composite	The horizontal blanking interval used to synchronize the timing of two or more video signals.
Y Gain	Component	A measurement of luma (Y) in the video signal that is the whitest point in the visible picture. Color bars are used to set the white level.
RY Gain	Component	The red (R) minus luminance (Y) color-difference signal of an *analog* component system in the SMPTE NTSC video standard. The signal consists of the following base equation for red (R), green (G), and blue (B) components: R–Y = –0.587G – 0.114B + 0.701R
BY Gain	Component	The blue (B) minus luminance (Y) color-difference signal of an *analog* component system in the SMPTE NTSC video standard. The signal consists of the following base equation for red (R), green (G), and blue (B) components: B–Y= (–0.587G + 0.886B – 0.299R) * gain value
Black	Component	A measurement of luminance in the video signal that is referenced to the blackest point in the visible picture. Also known as setup or pedestal. Color bars are used to set the black level.

Video Output Tool Settings: SD Tab (Continued)

Option	Suboption	Description
VBI (DV resolutions unsupported)		(Vertical Blanking Interval) Instructs the system to preserve or blank 5 lines above each field in NTSC and 8 lines above each field for PAL when you when you display a sequence or perform a digital cut. These lines are used to store additional encoded information such as closed captioning, edgecodes or key numbers for film projects, or various interactive or enhanced TV codes. • Blank — Blank the VBI information when the system performs a digital cut. This option also allows you to turn off the display of VBI information. • Preserve — Preserve the VBI information for a digital cut. This option also allows you to turn on the display of VBI information after a Blank command has been issued. If your facility uses VBI information, you add the VBI information to the video before the footage is captured by the Avid system. The system automatically captures VBI information when you capture footage, The VBI option in the Video Output tool allows you to preserve the information when you output your sequence. **You cannot preserve VBI information for DV or HD resolutions. You can only preserve VBI information for JFIF, uncompressed, and MPEG IMX resolutions.** By default the system does not display VBI information and does not preserve the information for digital cuts. The system fills the vertical blanking interval with video black (R=G=B=16). Only preserve these extra lines if you have a specific need for the information. For more information see "Preserving Information in the Vertical Blanking Interval" on page 580. The VBI value resets to Blank each time you launch the application. If you want to preserve VBI information, set the value before you perform a digital cut
Test Patterns		Allows you to choose a test pattern for calibrating during output.
Sync Lock	Internal Reference	Use this feature to lock your output connection to the reference or an internal signal on the Avid DNA hardware.
Settings menu		Lets you save the settings for an individual tape each time you calibrate bars.

Video Output Tool Settings: HD Tab (Adrenaline Only)

The following table describes options available in the Video Output Tool Settings: HD tab.

Video Output Tool Settings: HD Tab

Option	Suboption	Description
Output menu		Lets you select either HD Component RGB or HD Component YPbPr.
Overall Gain	HD Component RGB and HD Component YPbPr	A measurement of luma (Y) in the video signal that is the whitest point in the visible picture. Color bars are used to set the white level.
B Gain Pb Gain	HD Component RGB HD Component YPbPr	The blue (B) minus luminance (Y) color-difference signal of an *analog* component system in the SMPTE NTSC video standard. The signal consists of the following base equation for red (R), green (G), and blue (B) components: B–Y= (–0.587G + 0.886B – 0.299R) * gain value
R Gain Pr Gain	HD Component RGB HD Component YPbPr	The red (R) minus luminance (Y) color-difference signal of an *analog* component system in the SMPTE NTSC video standard. The signal consists of the following base equation for red (R), green (G), and blue (B) components: R–Y = –0.587G – 0.114B + 0.701R
HD Crossconvert	Specific format OFF	Allows you to output an HD format from an HD sequence with a compatible frame rate. The Crossconvert choices depend on the format of the sequence,
SD Downconvert		Allows you specify how downconverted SD video is resized. The options are Anamorphic, Letterbox, Center Cut, or OFF.
HD Test Patterns		Allows you to choose a test pattern for calibrating during output.
Sync Lock		Use this feature to lock your output connection to the reference or an internal signal on the Avid Adrenaline.
Settings menu		Lets you save the settings for an individual tape each time you calibrate bars.

Workspace Settings

The following table describes options available in the Workspace Settings.

Workspace Settings Options

Option	Description
Activate Settings Linked By Name	Select this option to link other settings to the workspace.
Continually Update This Workspace	Select this option to automatically preserve the workspace in its most recent arrangement. Future changes to the arrangement of the tool windows are saved.
Manually Update This Workspace	Select this option to save the workspace in its current arrangement when you click Save Workspace Now (which appears only after you select Manually Update This Workspace). Future changes to the arrangement of the tool windows are disregarded unless you return to the Workspace Settings dialog box and click Save Workspace Now again.

Chapter 19
File Format Specifications

To be compatible with a variety of imaging standards, your Avid editing application can accommodate many file types and formats. The following topics contain descriptions, specifications, and notes for importing and exporting specific file formats including:

- Graphics (Image) Files
- Animation Files
- Audio File Formats
- MXF Files
- OMFI Files
- BWF Files
- Field Ordering in Graphic Imports and Exports

To ensure usability and high quality, the files in some formats require preparation before being imported to your Avid editing application. Consequently, this section contains many more notes for import than for export. When you export a file, you select a file format from the Export Settings dialog box and select options appropriate for the format. For descriptions of the dialog box options, see “Export Settings Dialog Box Options” on page 657.

For information on import and export procedures, see the following topics in the Help:

- “Importing Files: Basics”
- “Importing Files: Advanced”
- “Exporting Frames, Clips, or Sequences: Basics”
- “Exporting Frames, Clips, or Sequences: Advanced”

Graphics (Image) Files

Avid editing applications use Image Independence® to produce usable files from a large number of graphics formats. Once you have imported a file in a particular format, you can export it in the same or different format, with the exception of Photo CD™; you cannot export a file to a Photo CD. (You can only import the Photo CD format on a Macintosh).

Supported Graphics (Image) File Formats

The following table briefly describes the supported graphics (image) file formats:

Supported Graphics (Image) File Formats

Format	Description
Alias	Alias PIX image format, developed by Alias Research, Inc. (now Alias|Wavefront, a division of Silicon® Graphics Limited) for use with their animation and visualization software.
BMP	Developed by Microsoft Corporation as the standard image file format used by Microsoft Windows.
Chyron	Developed by Chyron Corporation for use with video frame buffers of Chyron character-generator titles.
Cineon	Developed by Eastman Kodak™ for use in the Cineon Digital Film System. It is a subset of the SMPTE DPX (Digital Picture Exchange) format.
Framestore	Developed by NewTek for use with their Video Toaster system.
IFF	Developed by Electronic Arts. IFF (Interchange File Format), or more specifically IFF-ILBM (InterLeaved BitMap), is the standard file format by which applications on the Amiga platform transfer image files.
JPEG	Developed by the Joint Photographic Experts Group (JPEG). This format is highly suited for image storage and transmission purposes because of its ability to dramatically reduce the storage requirements for a file. JFIF files (JPEG File Interchange Format, the standard for constructing JPEG files) can also be imported and exported.
OMFI (import only)	Developed by Avid Technology, Inc. and many industry and standards partners for the interchange of digital media data between platforms and applications.
PCX	Developed by Zsoft Corporation for use with its PC Paintbrush paint software.
(Macintosh only) Photo CD (import only)	Developed by Kodak for use with the Kodak Photo CD storage medium. If you have difficulty importing this format directly into your Avid system, open the file in an application such as Photoshop, and use the Save As feature to save the file in a format that can be imported (such as TARGA, PICT, or TIFF).

Supported Graphics (Image) File Formats (Continued)

Format	Description
Photoshop	Developed by Adobe Systems Incorporated for use with its Adobe Photoshop image-editing software.
PICS (Macintosh only)	Format for a sequence of PICT images.
PICT	Developed by Apple Computer, Inc. as the format for Macintosh QuickDraw® images.
Pixar	Developed by Pixar for stored pictures.
PNG	Developed by the PNG Development Group originally as an alternative to the GIF image format. PNG is an acronym for Portable Network Graphics and is pronounced “ping.”
QRT	Developed on the Amiga personal computer to run on several operating systems. Used by many ray tracing programs, such as DKB Ray Trace and the QRT ray tracer.
Rendition	Developed by Numerical Design Ltd.
SGI	Developed by Silicon Graphics, Inc. for use as the standard format on their line of workstations.
Softimage	Developed by Softimage, Inc. (now a division of Avid Technology, Inc.) for use in their Softimage software.
Sun Raster™	Developed by Sun Microsystems, Inc. and supported mainly in Sun applications.
Targa	Developed by Truevision, Inc. (now Pinnacle Systems) and originally intended for support of the Truevision image-capturing hardware.
TIFF	Developed by Aldus Corporation (now Adobe Systems Incorporated) and Microsoft Corporation. TIFF is an acronym for Tag Image File Format.
Wavefront	Developed by Wavefront Technologies, Inc. (now Alias|Wavefront, a division of Silicon Graphics Limited) for storing pictures in a machine-independent manner.
XWindows	Developed by the MIT X Consortium and supported by many X Window System applications on workstations and some personal computers.
YUV	Defined by Abekas Video Systems (now Accom, Inc.), the YUV format is the raw data sent to the Abekas® machines.

Import Specifications for Supported Graphics File Formats

The following table contains specifications for those graphics file formats that are supported for import. The table uses the following terms:

- **Bit depth:** These numbers refer to color-depth resolution of the image based on the number of bits per pixel. For example, 2-bit images are displayed in black and white; 8-bit images are displayed in 256 colors; 16-bit images are displayed in thousands of colors; 24-bit images are displayed in millions of colors; and 32-bit images are displayed in millions of colors with an alpha channel.
- **Alpha channel:** This column states whether or not alpha channel import is supported. An alpha channel determines regions of transparency in the picture when it is keyed over a background.

An alpha channel must be straight and not premultiplied. Your Avid editing application does not properly import premultiplied alphas.

- **NA:** This notation means Not Applicable

For other requirements, see "Preparing Graphics Files for Import" on page 741 and "Frame Size for Imported Graphics" on page 743.

Graphics File Import Specifications

Format	Default File Name Extension	Bit Depth Support	Alpha Channel Support	Notes
Alias	.als	24-bit color, 8-bit grayscale	No	
BMP	.bmp	1-, 4-, 8-, and 24-bit	No	Four-bit BMP files saved with RLE (run-length encoded) compression are not supported. Photoshop does not support four-channel BMP files.
Chyron	.chr	32-bit	Yes	
Cineon	.cin	10-bit (logarithmic)	NA	
Framestore	.fs	24-bit	No	Pixel aspect information is saved with image data. When importing files generated from Video Toaster, select the option Force to Fit Screen.

Graphics File Import Specifications (Continued)

Format	Default File Name Extension	Bit Depth Support	Alpha Channel Support	Notes
IFF	.iff	1-bit to 24-bit color; 1-bit to 8-bit grayscale; 64-color EHB; 4096-color HAM; 262,144-color HAM8; SHAM; A-HAM; A-RES	1-bit alpha only	Pixel aspect information is saved with image data.
JPEG	.jpg	24-bit color, 8-bit grayscale	No	
OMFI	.omf			See "OMFI Files" on page 746.
PCX	.pcx	Color-mapped and 24-bit color	NA	PCX files with 1-bit color depth or odd-numbered pixel widths are not supported.
Photo CD (Macintosh only)			NA	If you are importing Photo CD files, you must install QuickTime software and a compatible QuickTime driver for Photo CD. Most Photo CD files are high resolution. If the photo has a portrait orientation, the image will be automatically rotated upon import. Use a paint or image-processing program to crop or resize the image before importing.
Photoshop	.psd	RGB 8-bits/channel, RGB16 bits/channel, grayscale, indexed color, and duotone variations	Yes	Multilayered graphics are supported for import. See "Importing Photoshop Graphics" on page 185. Duotone files are loaded as grayscale. Multichannel (greater than four channels) files are not supported. CMYK files not supported.
PICT	.pic	2-, 4-, 8-, 16-, and 32-bit	Yes	
Pixar	.pxr	24-bit, 36-bit	Yes	

Graphics File Import Specifications (Continued)

Format	Default File Name Extension	Bit Depth Support	Alpha Channel Support	Notes
PNG	.png	1-bit to 32-bit	Yes	Transparent areas in a PNG file are interpreted as an alpha channel on import.
QRT	.dbw	24-bit	No	
Rendition	.6rn	32-bit	Yes	
SGI	.rgb	8-bit or 16-bit grayscale; 8-bit grayscale plus 8-bit alpha channel; 24- and 48-bit color; 24-bit color plus 8-bit alpha channel; 64-bit (16 bits per component)	Yes	
Softimage	.pic	24-bit plus 8-bit alpha	Yes	Pixel aspect information is saved with the image. **Windows only) Double-clicking a Softimage file starts the application associated with PICT files because they use the same file name extension. Avoid double-clicking Softimage files to view them.**
Sun Raster	.sun	1-, 8-, or 24-bit	No	
Targa	.tga	8-, 15-, 16-, or 24-bit; 32-bit	Yes	
TIFF	.tif	8-bit color-mapped; 8-bit or 16-bit grayscale; 24- and 48-bit color; 24-bit color plus 8-bit alpha; 36-bit color plus 12-bit alpha; 42-bit color plus 14-bit alpha; 48-bit color plus 16-bit alpha	Yes	The following types of files are not supported: Multichannel (greater than four channels) files; Group 3-compressed (fax) files; CMYK files with extra channels; and JPEG-compressed files. Four-channel files from Avid Matador™ are imported as three-channel files.

Graphics File Import Specifications (Continued)

Format	Default File Name Extension	Bit Depth Support	Alpha Channel Support	Notes
Wavefront	.rla	32-bit and 64-bit	Yes	
XWindows	.xwd	1-, 2-, 4-, 8-, 16-, 24-, and 32-bit	No	
YUV	.yuv	24-bit	No	Pixel aspect information (based on the video format) is saved with image data. When importing, select the option Force to Fit Screen.

Preparing Graphics Files for Import

Your Avid editing application can import graphics files that have been created with a wide range of specifications, and if necessary, you can make adjustments during the importing process, see "Import Settings" on page 694. However, graphics files that conform to basic specifications will make the importing process easier and more efficient. The following table summarizes the requirements for graphics files that will be imported into your Avid editing application.

Graphics Requirements

Aspect	Requirement	Notes
Frame size (4:3)	Square pixels: 648 x 486 (NTSC) 640 x480 (NTSC DV) 768 x 576 (PAL)	These are the preferred sizes for NTSC and PAL. 720 x 540 can also be used, in some situations, for both NTSC and PAL. These are stored by the application as non-square pixels. For more information, see "Frame Size for Imported Graphics" on page 743.
Frame size (16:9)	Square pixels: 864 x 486 (NTSC anamorphic) 1024 x 576 (PAL anamorphic) 1280 x 720 (HD) 1920 x 1080 (HD)	Preferred sizes. SD media is stored by the application as non-square pixels.
Alpha channel	White foreground (transparent), black background (opaque)	This is the standard used by graphics, animation, and compositing packages. The graphics need to have the alpha channel inverted on import.

Graphics Requirements (Continued)

Aspect	Requirement	Notes
Color mode	RGB ITU-R 601 ITU-R 709	Other formats, including CMYK, can cause import errors. ITU-R 601 is used for SD and ITU-R 709 is used for HD. In HD projects, your Avid editing application automatically converts the media.
File format	Various	Your Avid editing application accepts many file formats for input. TIFF (.tif), PICT (.pct), and PNG (.png) are commonly used formats. See "Import Specifications for Supported Graphics File Formats" on page 738.
File field order	Odd (Upper field first) Even (Lower field first)	For interlaced media, your Avid editing application uses the following order: • NTSC (601 and DV): lower field first • PAL 601: upper field first • PAL DV: lower field first • HD Interlaced: upper field first If the field order of the graphic is not correct, select the field order of the graphic during import and the application will reverse the fields appropriately. Field order does not apply to progressive media. See "Field Ordering in Graphic Imports and Exports" on page 752.

Before you import a graphics file to your Avid editing application, you can also use third-party image-editing software to make adjustments such as the following:

- Create the file in the appropriate size, resolution, and bit depth.
- Crop or color-correct an image.
- Eliminate jagged edges in an image by using the image-editing application's anti-aliasing or high-quality option.
- Add transparency (to some formats) by adding an alpha channel.
- In some cases, convert an image file that does not support an alpha channel to a format that does, in order to add transparency.

You can import and key the image over video by using key effects within the Avid application. However, importing an image with an existing alpha channel provides the best results.

For specific procedures and file formats, see the documentation that accompanies the image-editing software.

Frame Size for Imported Graphics

The table in this topic shows the frame sizes to use when creating and importing graphics and sequences. This table includes sizes for both square and non-square pixels. When creating graphics for import, it's important to distinguish between these types of pixels.

Computer display cards usually use square pixels, and as a result most graphic and animation programs also use square pixels.

Standard-definition (SD) digital video does not use square pixels. The ITU-R 601 standard specifies a 720-pixel width for both NTSC and PAL. However, because NTSC and PAL each has a different number of scan lines (486 for NTSC, 576 for PAL), digital video pixels are stretched vertically for NTSC and horizontally for PAL. These stretched pixels are referred to as non-square pixels. Your Avid editing application stores SD video as non-square pixels.

High-definition digital video uses square pixels.Your Avid editing application stores HD video as square pixels, except for DVCPRO HD, which is stored as non-square pixels.

Some graphics programs allow you to render a graphic or animation in either square or non-square pixels. As a general guideline, render standard-definition animations and composites in non-square pixels. For still graphics, you can simply export in square pixels. Your Avid editing application will convert these into non-square pixels during the import process.

The numbers in the following table describe the recommended width and height, in pixels, to create a source image that will be displayed full-screen after import. An image with smaller dimensions will take up less of the screen or will be distorted, while an image that exceeds these dimensions might appear distorted, depending on your choices when importing. See "Import Settings: Image Tab" on page 694.

Frame Size for Imported Graphics

Frame Size	Square Pixels	Non-square Pixels
Frame size (4:3)	648 x 486 (NTSC) 640 x 480 (NTSC DV) 768 x 576 (PAL)	720 x 486 (NTSC) 720 x 480 (NTSC DV) 720 x 576 (PAL)
Frame size (16:9)	864 x 486 (NTSC anamorphic) 1024 x 576 (PAL anamorphic) 1280 x 720 (HD) 1920 x 1080 (HD)	720 x 486 (NTSC) 720 x 576 (PAL) Not applicable Not applicable

Animation Files

This topic describes the animation file formats that your Avid editing application supports.

In addition to the specific formats described below, your Avid editing application also supports sequences of image files. You must name image file sequences appropriately for your Avid editing application to handle them correctly on import. Name each file in the sequence NameN.ext, with Name identifying the animation, N indicating the file order, and .ext indicating the file type (for example, Image1.jpg, Image2.jpg, Image3.jpg). The numbering can start at any number except 0, or use any numbering format (for example, Image010.jpg, Image012.jpg, or Imagef28.jpg, Imagef29.jpg).

Your Avid editing application imports the file at the frame rate that is set in the project. Set the appropriate frame rate for the project when you export from a third-party application.

ERIMovie

Developed by Elastic Reality, Inc. (now a division of Avid Technology, Inc.) for quick playback of rendered movies on Silicon Graphics, Inc. platforms.

ERIMovie files use the .mov or .eri file name extensions. QuickTime for Windows also uses the .mov file name extension. However, QuickTime does not support ERIMovie, and double-clicking an ERIMovie file will cause an error.

There is no player for ERIMovie on Windows or Macintosh platforms; the `mview` *program supports ERIMovie on Silicon Graphics systems.*

PICS (Macintosh only):

Developed by Apple Computer, Inc. A PICS file is a sequence of PICT images. Many applications that handle multiple image formats on the Macintosh platform also support PICS files.

Only uncompressed data can be stored in PICS format. PICS export does not allow PICS containers larger than 16 MB.

QuickTime

Developed by Apple Computer, Inc. for multimedia on multiple platforms.

QuickTime files use the .mov file name extension. After you import a QuickTime file, the file maintains the .mov file name extension, which is visible in a bin. The .mov file name extension is the default for export.

Avid QuickTime codecs enable you to fast import and export QuickTime files. To use the codecs in a third-party application, see “Exporting from a Third-Party QuickTime or AVI Application” on page 545.

To take advantage of the speed of Avid QuickTime codecs, you must export the files from the QuickTime application at the appropriate frame size for the project you plan to import to in your Avid editing application.

AVI (Audio Video Interleave) (Windows Only)

Developed by Microsoft for storing video and audio information as part of its Video for Windows standard.

AVI files use the .avi file name extension. After you import an AVI file, the file maintains the .avi file name extension, which is visible in a bin. The .avi file name extension is the default for export.

Avid AVI files can be quite large, especially at high video resolutions. They require adequate storage and transfer capabilities.

Audio File Formats

The following table briefly describes the supported audio file formats:

Audio File Formats

Format	Description
Audio Interchange File Format (AIFF-C)	Format for audio files developed by Apple Computer, Inc.
(Macintosh only) Sound Designer II (SDII)	Native format of the Sound Designer II application developed by Digidesign, Inc., a division of Avid Technology, Inc. *Media Composer has limited support for Sound Designer II audio. See “Working with Sound Designer II Audio Files on Macintosh Systems” in the Help.*
Wave Format (WAVE)	Format for audio files developed jointly by Microsoft and IBM. WAVE files are playable by nearly all Windows applications that support sound.
PCM (MXF)	PCM (Pulse Code Modulation) is an industry-standard audio format. Avid MXF files store audio as PCM data. See “MXF Files” on page 746.

You can capture, render, and edit audio in any of these formats.

MXF Files

Material Exchange Format (MXF) is a wrapper or container format which encapsulates media and rich production metadata into a single file, which is useful for media storage and exchange. It is an open technology that can be implemented by any manufacturer.

MXF has been designed to be flexible enough for use in all stages of content creation, from acquisition, to authoring, to distribution.The primary benefit of MXF is that it provides greater workflow efficiency by preserving useful metadata as media files make their way through the content creation process.The MXF format is independent of the type of content that it contains, so an MXF file can contain video and/or audio at any resolution or compression. In many instances MXF files will encapsulate media which is already formatted to one of the existing industry standards.

MXF allows for easy exchange of material between file servers, tape streamers and digital archives. MXF is an ideal interchange format to enable workflow efficiencies in news broadcasting, post production, asset management, and archiving applications. For example, Avid|DS and ProTools support MXF files.

You can select the MXF format when capturing, importing, creating titles, or rendering effects. See “Media Creation Settings” on page 709.

OMFI Files

OMFI was developed by Avid Technology, Inc. and many industry and standards partners for the interchange of digital media data between platforms and applications. For information about creating an OMFI file on a non-Avid application, see the documentation for the application.

The information in the following table applies to importing OMFI files.

OMFI File Import Specifications

OMFI File Import Specifications	Notes
Resolution	For optimum import speed and quality, export or render the file from the source application at the resolution you want, and then import the file into your Avid editing application at that resolution. For more information, see “Import Settings: OMFI Tab” on page 700.

OMFI File Import Specifications (Continued)

OMFI File Import Specifications	Notes
Frame or Edit rate	You must import sequences and clips to projects that have the same edit rate (29.97 fps or 23.976 fps for NTSC, 25 fps for PAL, 24 fps for film). If the edit rates do not match, you will receive an error message. *Your Avid editing application cannot import an OMFI audio file that was produced with an edit rate equal to the audio sampling rate. Trying to import such a file results in an "Unrecognized file type" error message. Create the source file with an edit rate at the project edit rate (29.97 fps, 25 fps, 24 fps, or 23.976 fps).*
OMFI version	Avid editing applications recognize and support OMFI 1.0 composition and media files and OMFI 2.0 composition files. The following OMFI 2.0 effects are supported generally: • Video effects: dissolves, wipes, freeze frame, film pulldown, slow motion, fade to black • Audio effects: pan and volume, audio dissolves Other effects can be imported from other Avid applications.
Film pulldown	To import audio media, set the pulldown switch to 1.0.
Audio sample rate	Audio media is imported at the sample rate that is set in the Avid editing application. *Avid editing applications cannot import an OMFI audio file that was produced with an edit rate equal to the audio sampling rate. Trying to import such a file results in an "Unrecognized file type" error message. Set the edit rate to the project edit rate (29.97 fps, 25 fps, 24 fps, or 23.976 fps).*
Avid MCXpress™ for Windows NT® files	If you are importing OMFI compositions from Avid MCXpress for Windows NT, you might receive an error if the sequence includes video or audio effects. If this happens, create a cuts-only version of the sequence in Avid MCXpress and export it again. You cannot import video media from Avid MCXpress for Windows NT; if you import a composition, you must recapture the media.
File transfer	If you are transferring an OMFI file over a network, transfer it as a binary file.
Reimporting Avid media files	If you import OMFI files that contain media you exported from the same system, you need to delete the original media. Otherwise, the new media will not overwrite the original media. To learn how to find related media files for a sequence, see "Finding a Related Media File" on page 268.

BWF Files

Avid editing applications support any BWF files that adhere to the BWF specification. Some BWF information always appears in bin columns.

You can use Avid-specific coding to add additional information. Currently, the following vendors have products that can provide this additional information:

- Aaton
- Zaxcom
- Nagra
- Fostex

Avid editing applications support 24-bit audio data, and up to 16 tracks in a single file. You can use the AutoSync™ feature to sync these tracks. You can also use AutoSync to sync picture and sound.

BWF Information Displayed in Bins

The following information from BWF files always appears in bin columns:

Bin Column	BWF Source
Clip name	Imported file name. If scene and take information is provided, the clip name is created as *scene/take.*
Tape ID	Imported file name.
Start	The start timecode specified in the file.
Shoot date	The origination date specified in the file.
Tape Name	If there is no tape name specified in the file, a name is created by concatenating the origination date and the imported file name.

Preparing Custom BWF Information

Additional information can be displayed in bin columns, but this information needs to be coded in a particular format. The recording device must provide this information in the BWF Description field, using the following keyword/value pairs:

`uKEYWORD=data[CR/LF]`

Syntax	Definition
u	Letter code of the manufacturer. Use the letter u unless otherwise instructed by Avid.
KEYWORD	Designation of the bin column.
=	Terminates the keyword.
data	Information to include in the bin column.
[CR/LF]	(carriage return/line feed) Terminates the data.

For example,

`uSCENE=1A[CR/LF]`

after importing, displays “1A” in the Scene column of the bin into which it was imported.

The following table describes how to code BWF information for particular bin columns:

Bin Column	BWF Source
Comments (editable text field that appears in the bin script view)	*u*NOTE=*x,* where *x* is text.
Scene	*u*SCENE=*x,* where *x* is text.
Take	*u*TAKE=*x,* where *x* is text.
Tape Name	*u*TAPE=*x,* where *x* is text. If there is no tape name specified, a name is created by concatenating the origination date and the file name.
TRK1 through TRK8	*u*TRK*n*=*x* where *n* is the track number, and *x* is text.
User Bits (custom column)	*u*UBITS=*$hhhhhhhh* where *hhhhhhhh* is the 32-bit hexadecimal encoded user bits.

In addition, to assign a file to a particular track number, the file name needs to end in _*n*, -*n*, or a space followed by *n* (where *n* is the track number). For example, a file named Orchestra_1.bwf would create the audio on track A1.

To avoid display of a dialog box during import, you can specify the frame rate using the following syntax:

```
uFRAMERATE=nDF or
uFRAMERATE=nND
```

where *nn* is the frame rate (25, 29.97, or 30), DF is drop-frame, and ND is non-drop-frame.

Importing and Syncing BWF Files

You can import BWF files into an Avid editing application approximately 10 to 12 times faster than capturing in real time. The files maintain pure digital quality for all audio post processing. For basic information on importing audio files, see “Importing Files” in the Help.

During import of NTSC BWF files, if no frame rate is specified in the file, a dialog box appears and asks if the conversion should use 29.97 fps or 30 fps, and drop-frame or non-drop-frame. Your choices depend on how the audio was recorded.

After you capture video, use the AutoSync™ feature to sync picture and sound or multiple tracks of sound. If you are using BWF files from a 24-fps shoot in a PAL project, you must use the PAL Method 2 approach, in which picture and sound are captured separately.

If you are working in a PAL 24p project, you need to take an extra step to make sure the picture and sound are correctly synced.

To import and sync BWF files:

1. Create a project, based on the source footage.
2. Import the log file, and capture the video footage.
3. Import the BWF file into the same bin in which you captured the video footage.
4. For 24p PAL projects, you need to create a new bin column:
    a. Highlight the Start timecode column.
    b. Select Edit > Duplicate.
    c. From the list of columns, select Aux TC 24 and click OK.
    d. In the dialog box, click Convert.
    e. Display the Auxiliary TC1 column.
    f. Highlight the Aux TC 24 column, and copy it to the Auxiliary TC1 column.

Use Auxiliary TC 1 only as a sync point reference for AutoSync. Do not use it for data tracking or EDL generation.

Use the Aux TC24 column to generate a 24-frame EDL for audio only. Use the Film TC column to generate a 24-frame EDL for video only. This timecode field represents the video timecode of a HD downconvert to standard definition video.

5. Make sure all entries in the Shoot Date column use the same syntax. Currently, some BWF files use the format 2003/10/03 as the Shoot Date while some ALE files use 2003-10-03. This field is used as part of the AutoSync process to guarantee the uniqueness of the timecode. To fix this problem, do one of the following:
   - Manually change the format of one set of clips to match the other.
   - If you do need the information, create a custom column with a different name, select Edit > Duplicate to copy the information into the custom column, and delete the Shoot Date column.
6. Highlight the picture and audio clips and select Bin > AutoSync.
7. For 24p PAL projects, use Auxiliary TC1 as a sync point. For other projects, use the Start timecode.

   Your Avid editing application creates new subclips with synced picture and sound, which are ready for editing.

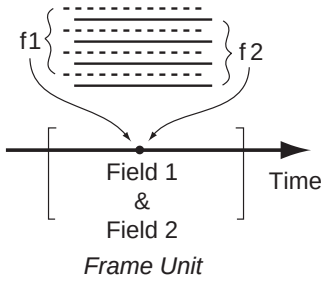
Reimporting BWF Files

You can reimport BWF files in the same way as you reimport other audio files. You can also batch capture from a source tape, because the clips are associated with a tape name. For more information on reimporting and batch capturing, see “Reimporting Files” and “Batch Capturing from Logged Clips” in the Help.

Field Ordering in Graphic Imports and Exports

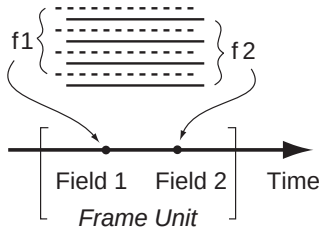
Graphic images are composed of one or more image files, each of which contains a full frame. These frames contain fields (formed from the odd-numbered and even-numbered lines of the image frame) that have three basic arrangements:

- **Progressive or still frame:** The upper and lower fields in the frame originated at the same instant of time, or are coherent with each other, as shown in the following illustration.

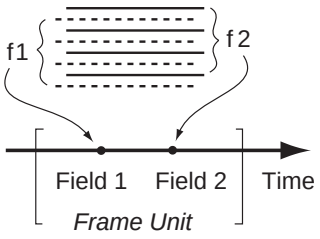


Dashed lines = Field 1
Solid lines = Field 2

- **Upper field is first:** The upper field in the frame (odd-numbered lines, when the frame lines are numbered starting from 1) occurs temporally before the lower field, as shown in the following illustration. This arrangement is termed “upper field first” (or “lower field second”).



- **Lower field is first:** The lower field in the frame (even-numbered lines) occurs temporally first, as shown in the following illustration. This arrangement is termed “lower field first” (or “upper field second”).



Preventing a Spatial Field Mismatch on Import

The following table shows the proper spatial field position for each of the common video formats in Avid editing applications.

In the following table, Odd Field or Even Field specifies whether the temporally first field in the frame has the odd or even numbered lines, starting from 1.

Recommended Field Settings for Two-Field Import and Export

Avid Video Format	Upper/Lower Field Spatial Setting	Field Setting for Import and Export
AVR NTSC	Upper field is first.	Odd Field
AVR PAL	Upper field is first.	Odd Field
Other NTSC	Lower field is first.	Even Field
Other PAL	Upper field is first.	Odd Field

Graphics utilities, such as Adobe After Effects, permit selection of either spatial relation for the fields when rendering a sequence of interlaced fields. If the rendering is performed as shown in the preceding table, then the import is correct.

If the spatial positions of the two fields are reversed (for example, the upper field should be a lower field), the import cannot be done without correcting the spatial relationship. In this spatial mismatch situation, Avid editing applications convert the upper field to a lower field by deleting the top line of the upper field and replicating the bottom line. The field is thus converted to a lower field relative to the other field. The import operation can now proceed.

When exporting to DVD for TV playback, it is recommended to transcode any clips that do not match the field ordering of the majority of the clips. Not doing this results in field ordering being swapped during playback.

Spatial Field Relationship on Export

The default export operation is automatically carried out as shown in the preceding table. The fields are properly interleaved in the export frames (one frame per file).

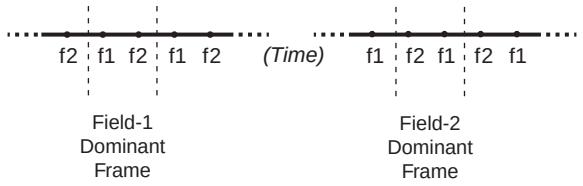
If an import comes in mismatched and the dropping of the top line and repeating of the bottom line is performed, you might decide to have the export operation performed to prevent a shift up or down by a line. The Export Settings dialog box permits you to select the spatial arrangement that is the opposite of what is otherwise recommended. This option should rarely be used.

24p and 25p Import and Export

The spatial field selection options do not apply for 24p and 25p projects because the frames in these projects are already in progressive or still-image form.

Field Dominance

Editing in Avid applications is frame based. All timecode is expressed in frame numbers, and all cuts are at frame boundaries. A raw video stream has no concept of frames (ignoring color framing) until the frame unit is defined. Defining the *dominant field* for the system defines the "***frameness"*** of the video stream, as shown in the following figure.



Avid editing applications all use field 1 as the dominant field. This means that the first field temporally in the edit frame will always be field 1. Field 2 will always be the second frame in the edit frame. Cuts will always precede field 1.

Fields in Video

In the video signal, fields have a temporal position that is unambiguously and uniquely tied to the details of the video signal, regardless of whether the signal is analog or digital (SDI). This means that working around a field spatial mismatch should be done by correcting the spatial relation between the two fields rather than the temporal position. In some cases, it is possible to modify the field dominance of the input image files, but this is cumbersome, results in the loss of two fields, and is more difficult to carry out than either the workaround provided in Avid editing applications or rerendering properly to the other spatial relationship.

Chapter 20

Resolutions and Storage Requirements

This section describes the different resolutions available in your Avid editing application and lists their specifications. It also explains how to estimate the drive space you will require to store your captured media. This section includes the following topics:

- Compression and Avid Editing Systems
- Monitor Display Resolutions
- Compression and Resolutions
- Storage Requirements
- Maximizing Drive Space
- Managing Storage to Improve Playback Performance

The resolutions available in your Avid editing application depend on its model and options.

Compression and Avid Editing Systems

Avid editing applications support both compressed and uncompressed resolutions.

When an Avid editing application captures and stores video at a compressed resolution, it employs compression techniques that affect the size of the resulting files and the resolution of the images they contain. The less the data is compressed, the higher the image resolution, and the more drive space the file requires.

Large media files at high resolutions can use very large amounts of drive space. When you are choosing an image resolution for your project, you need to balance your requirements in terms of image quality with your available drive resources.

You can use lower resolutions when your work does not require very high image quality (for example, in offline work, or in CD-ROM or Web authoring projects), and higher resolutions when you need excellent image quality. You can also mix different resolutions within the same project as long as those resolutions are compatible with one another. See "Mixing Resolutions" on page 766.

Avid editing applications also support the capture and storage of video that is not processed by a data compression scheme:

- Uncompressed video (1:1) is available as standard definition (conforming to the ITU-R 601 standard) or as high definition (conforming to the ITU-R 292M standard). The image quality of uncompressed video is very high, but uncompressed files require very large amounts of drive space.
- DV (digital video) is a compressed media format. SMPTE standards specify how to take 601 video and convert it to a compressed format. When capturing through a 1394 connection, your Avid editing application records DV media in its native format, and does not compress it further.

Monitor Display Resolutions

The display resolution for the Source, Record, and other monitors in your Avid editing application is different for NTSC, PAL, and HD.

Monitor Display Resolutions

Video Format	Active video displayed (in pixels)	Stored video not displayed
NTSC JFIF (ITU-R 601) NTSC 1:1 (Uncompressed) NTSC MPEG IMX	720 x 486 non-square	10 lines of blanking or varietal interval timecode (VITC) per frame (5 lines per field)
NTSC DV 25 and DV 50	720 x 480 non-square	None
PAL JFIF (ITU-R 601) PAL 1:1 (Uncompressed) PAL MPEG IMX	720 x 576 non-square	16 lines of blanking or VITC per frame (8 lines per field)
PAL DV 25 and DV 50	720 x 576 non-square	None
HD 720	1280 x 720 square	None
HD 1080	1920 x 1080 square	None

For more information on blanking or VITC, see "Preserving Information in the Vertical Blanking Interval" on page 580.

Compression and Resolutions

Avid editing applications provide you with a range of resolutions, both compressed and uncompressed, that you can use at various stages of your project. You can also mix certain resolutions within a sequence.

For information on resolutions to use when importing graphics or sequences from a third-party application, see "Screen Resolution for Imported Graphics and Sequences" in the Help.

Resolution Specifications

The following tables provide information about HD resolutions, Avid JFIF resolutions, multicamera resolutions, DV resolutions, and MPEG resolutions:

- "Resolution Specifications: HD" on page 758
- "Resolution Specifications: JFIF Interlaced" on page 760
- "Resolution Specifications: JFIF Progressive" on page 762
- "Resolution Specifications: Multicam" on page 763
- "Resolution Specifications: Digital Video (DV)" on page 763
- "Resolution Specifications: MPEG" on page 764

For information on drive striping requirements for different resolutions, go to the Avid online Knowledge Base at www.avid.com/onlinesupport and search for "Drive Striping Tables."

For detailed guidelines on estimating space requirements, see "Storage Requirements" on page 767.

The resolutions available on your Avid editing application might vary from this list, depending on the model and the hardware used in your system.

Resolution Specifications: HD

Your Avid editing application includes support for the capture, editing, and output of high-definition (HD) media in Avid DNxHD™ and DVCPRO HD resolutions. It also supports play, edit, import, render, transcode, and export of high-definition (HD) media in 1:1 (uncompressed) resolution. See "Support for Uncompressed HD Media" on page 765.

Avid DNxHD encoding technology delivers mastering-quality 8-bit or 10-bit HD media at standard-definition (SD) data rates and file sizes.

The following table provides information about HD resolutions for interlaced and progressive media. HD resolutions are available only in MXF format.

Resolution Specifications: HD (MXF only)

Resolution	Bits	Project Format	Frame Size	Frames/sec	Megabits per second (Mb/sec)
1:1 10b HD	10	1080i/59.94	1920 x 1080	29.970	1243
1:1 HD	8				994
DNxHD 220 X	10				220
DNxHD 220	8				220
DNxHD 145	8				145
DVCPRO HD	8				100
1:1 10b HD	10	720p/50	1280 x 720	50	
1:1 HD	8				
DNxHD 220 X	10				
DNxHD 220	8				
DNxHD 145	8				
DVCPRO HD	8				
1:1 10b HD	10	720p/59.94	1280 x 720	59.94	1105
1:1 HD	8				884
DNxHD 220 X	10				220
DNxHD 220	8				220
DNxHD 145	8				145
DVCPRO HD	8				100
1:1 10-bit HD	10	1080i/50	1920 x 1080	25.00	1037
1:1 HD	8				829
DNxHD 185 X	10				185
DNxHD 185	8				185
DNxHD 120	8				120
DVCPRO HD	8				100

Resolution Specifications: HD (MXF only) (Continued)

Resolution	Bits	Project Format	Frame Size	Frames/sec	Megabits per second (Mb/sec)
1:1 10-bit HD	10	1080p/25	1920 x 1080	25.00	1037
1:1 HD	8				829
DNxHD 185 X	10				185
DNxHD 185	8				185
DNxHD 120	8				125
DNxHD 36	8				36
1:1 10-bit HD	10	1080p/24	1920 x 1080	24.00	995
1:1 HD	8				796
DNxHD 175 X	10				175
DNxHD 175	8				175
DNxHD 115	8				115
DNxHD 36	8				36
1:1 10-bit HD	10	1080p/23.976	1920 x 1080	23.976	994
1:1 HD	8				795
DNxHD 175 X	10				175
DNxHD 175	8				175
DNxHD 115	8				115
DNxHD 36	8				36
1:1 10-bit HD	10	720p/23.976	1280 x 720	23.976	442
1:1 HD	8				354
DNxHD 90 X	10				90
DNxHD 90	8				90
DNxHD 60	8				60
DVCPRO HD	8				100

The data rate (bandwidth) for Avid DNxHD resolutions is calculated per second for each frame rate. For example, DNxHD 220 has a compressed data rate of 220 Mb/sec at 29.97 fps. DNxHD 185, which is an equivalent resolution, has a compressed data rate of 185 Mb/sec at 25 fps. For more information, see "Resolution Specifications: HD" on page 758.

A good guideline for selecting a resolution is to use the Avid DNxHD resolution that matches the megabit data rate of the acquisition format. For HDCAM-originated material, for example, select DNxHD 145, which closely matches the data rate of HDCAM but provides better mastering results with significantly less storage required. The following table compares Avid HD formats to the HDCAM format.

Avid HD Formats and HDCAM Format

	Avid DNxHD 36	Avid DNxHD 145	Avid DNxHD 220	Sony HDCAM™
Bit Depth	8-bit	8-bit	8-bit and 10-bit	8-bit
Sampling	4:2:2	4:2:2	4:2:2	3:1:1
Bandwidth	36 Mb/sec	145 Mb/sec	220 Mb/sec	135 Mb/sec

Resolution Specifications: JFIF Interlaced

Avid resolutions use a simple notation — *x:1* — to identify the level of compression. The value of *x* indicates the level of compression that is applied to the image data. For example, a 3:1 compression ratio compresses the original data to one-third of its uncompressed size.

A lower compression ratio (a lower number to the left of the colon) results in better image quality but requires more drive space to store the captured media. A lower compression ratio might also require drive striping to keep up with the high volume of data.

The following table provides information about the Avid resolutions for interlaced media (30i NTSC and 25i PAL projects). Field size does not include blanking or VITC lines.

Resolution Specifications: JFIF Interlaced (MXF and OMF)

Resolution	Field Size (Visible Pixels)	Fields Per Frame	Quality
15:1s	352 x 243 (NTSC) 352 x 288 (PAL)	1	Offline Maximum storage with enough image detail to make basic editing decisions (you can check lip sync on a medium shot)
4:1s	352 x 243 (NTSC) 352 x 288 (PAL)	1	Offline A good storage resolution combined with a good offline image quality
2:1s	352 x 243 (NTSC) 352 x 288 (PAL)	1	Online Provides enough detail for finishing multimedia jobs such as CD-ROM and Web authoring

Resolution Specifications: JFIF Interlaced (MXF and OMF) (Continued)

Resolution	Field Size (Visible Pixels)	Fields Per Frame	Quality
20:1	720 x 486 (NTSC) 720 x 576 (PAL)	2	Offline Useful for mixing storage-efficient offline footage with online-quality resolutions
10:1	720 x 486 (NTSC) 720 x 576 (PAL)	2	Offline/online A good compromise for high-quality, two-field offline or low-quality online that saves drive space
3:1	720 x 486 (NTSC) 720 x 576 (PAL)	2	Online A medium-quality online resolution that can sustain two-stream playback on 2-way striped drives
2:1	720 x 486 (NTSC) 720 x 576 (PAL)	2	Online Provides the highest image quality of any compressed resolution and sustains two-stream playback on 4-way striped drives
1:1 SD	720 x 486 (NTSC) 720 x 576 (PAL)	2	Online uncompressed Provides the highest 8-bit image quality
1:1 10b SD (MXF only)	720 x 486 (NTSC) 720 x 576 (PAL)	2	Online uncompressed Provides 10-bit image quality

Resolution Specifications: JFIF Progressive

The following table provides information about the Avid resolutions for progressive media (24p NTSC and 24p PAL projects). Frame size does not include blanking or VITC lines.

Resolution Specifications: JFIF Progressive (MXF and OMF)

Resolution	Frame Size (Pixels)	Quality
35:1	720 x 486 (NTSC) 720 x 576 (PAL)	Offline Maximum storage with enough image detail to make basic editing decisions
28:1	720 x 486 (NTSC) 720 x 576 (PAL)	Offline Low storage requirements combined with a good offline image quality
14:1	720 x 486 (NTSC) 720 x 576 (PAL)	Offline The best offline image quality
3:1	720 x 486 (NTSC) 720 x 576 (PAL)	Online A medium-quality online resolution that can sustain two-stream playback on 2-way striped drives
2:1	720 x 486 (NTSC) 720 x 576 (PAL)	Online Provides the highest image quality of any compressed resolution and sustains two-stream playback on 4-way striped drives
1:1 SD	720 x 486 (NTSC) 720 x 576 (PAL)	Online uncompressed Provides the highest 8-bit image quality
1:1 10b SD (MXF only)	720 x 486 (NTSC) 720 x 576 (PAL)	Online uncompressed Provides 10-bit image quality

Resolution Specifications: Multicam

Both video (interlace) and progressive projects support multicamera resolutions (**m** resolutions). The m resolutions cannot be mixed with resolutions in other families. The capture of a multicamera resolution in a video project results in single-field compressed media that has been resized horizontally to 288 pixels wide. Playback decompresses and resizes to 720 pixels wide. The resulting single field is played back the same as s resolution media, where one field per frame time is presented to the video out device. Frame size does not include blanking or VITC lines.

In previous releases of the editing application with the Meridian hardware, m resolutions were recommended for Multicam. With Adrenaline hardware, this is no longer the case. The m resolutions remain for compatibility reasons, but are not recommended for use with the current product.

Resolution Specifications: Multicam (MXF and OMF)

Resolution	Frame Size (Pixels)	Quality
10:1m interlaced	720 x 486 (NTSC) 720 x 576 (PAL)	Offline
8:1m progressive	720 x 486 (NTSC) 720 x 576 (PAL)	Offline
4:1m interlaced	720 x 486 (NTSC) 720 x 576 (PAL)	Online
3:1m progressive	720 x 486 (NTSC) 720 x 576 (PAL)	Online

Resolution Specifications: Digital Video (DV)

Digital video (DV) is an international standard created by a consortium of 10 companies to serve as a consumer digital video format. Avid editing applications support three DV resolutions: DV 25, DV 50, and DVCPRO HD.

DV, originally known as DVC (Digital Video Cassette), uses a 1/4-inch tape to record very high quality digital video. The video is sampled at the same rate as D1, D5, or Digital Betacam video (720 pixels per scan line). The color information in DV 25 is sampled at the D1 rate of 4:1:1 in 525-line (NTSC) and 4:2:0 in 625-line (PAL) formats. DV 50 is defined as 720 x 480, 50-megabit-per-second (Mb/s) 4:2:2 DV. DVCPRO HD is an HD format (DVCPRO HD), which is available in both 720p and 1080i resolutions, at 100 Mb/sec.

The following table provides DV resolution specifications for Avid applications with the DV/MPEG option or the HD option.

Resolution Specifications: Digital Video (MXF and OMF)

Resolution	Frame Size	Color Sampling	Megabits per second (Mb/sec)
DV 25 411 interlaced	720 x 480 (NTSC) 720 x 576 (PAL)	4:1:1	25
DV 25p 411 progressive	720 x 480 (NTSC) 720 x 576 (PAL)	4:1:1	25
DV 25 420 interlaced	720 x 576 (PAL)	4:2:0	25
DV 50 interlaced	720 x 480 (NTSC) 720 x 576 (PAL)	4:2:2	50
DV 50p progressive	720 x 480 (NTSC) 720 x 576 (PAL)	4:2:2	50
DVCPRO HD (720p)	1280 x 720	4:2:2	100
DVCPRO HD (1080i)	1920 x 1080	4:2:2	100

Resolution Specifications: MPEG

MPEG resolutions are resolutions specifically intended to support the SMPTE Type D-10 bit stream produced and recorded by devices such as Sony MPEG IMX VTRs. It uses 4:2:2 sampling.

The following table provides MPEG resolution specifications for Avid editing applications with the DV/MPEG option. Frame size does not include blanking or VITC lines.

Resolution Specifications: MPEG (MXF and OMF)

Resolution	Frame Size (Visible pixels)	Megabits per second (Mb/sec)
MPEG 30	720 x 480 (NTSC) 720 x 576 (PAL)	30
MPEG 40	720 x 480 (NTSC) 720 x 576 (PAL)	40
MPEG 50	720 x 480 (NTSC) 720 x 576 (PAL)	50

Support for Uncompressed HD Media

Some Avid editing applications let you play, edit, import, render, transcode, and export a single-stream of real-time uncompressed (1:1) HD media. To capture uncompressed HD media, use an Avid editing application that supports capture of uncompressed HD media. Then share the media through shared storage, a network, or removable media.

Note the following:

- You can play uncompressed HD media as Best Performance quality (yellow) and Draft Quality (yellow/green). Playback of uncompressed HD media through Avid DNA hardware as Full Quality (green) is not supported.

  You can view and play uncompressed HD media in Full Quality mode in the Source and Record monitors and in full-screen playback (software-only), but you might notice skipped frames during playback. Media plays as black in a Client monitor.
- 10-bit uncompressed HD media plays back as 8-bit preview.
- You can play and edit uncompressed HD media in HDV projects, but you cannot create uncompressed HD media.
- For information on drive requirements for uncompressed HD media, see the drive striping tables for your Avid editing application at Avid's online Knowledge Base. Go to www.avid.com/onlinesupport and search for "Drive Striping Tables."

Mixing Resolutions

In a single sequence, you can mix resolutions. However, you cannot mix the following:

- NTSC and PAL resolutions
- Media captured at different frame rates

Avid recommends you do not mix interlaced resolutions with progressive resolutions. Mixing interlaced resolutions with progressive resolutions might result in problems with scrolling titles, exporting, and performing digital cuts.

Mixing resolutions in a sequence saves time and effort in a variety of circumstances:

- You can do most of your work at a resolution that can play back real-time effects, digitizing only the most complex shots and graphics at a high-quality, single-stream resolution.
- For storage and playback efficiency, you can capture complex footage at the draft-quality online resolution and edit it along with other online resolutions.
- You can avoid some recapturing by importing complex graphics at a high-quality resolution and by digitizing the remaining footage at draft quality during the offline phase.
- You can exchange material between projects with a minimum of recapturing.
- You can develop material among workstations at different resolutions and bring the material together for a final cut without recapturing.

For information on resolutions to use when importing graphics or sequences from a third-party application, see "Frame Size for Imported Graphics" in the Help.

Resolution Groups and Image Quality

Although it is generally true that a lower compression ratio means higher image quality, the resolution group itself (single-field, two-field, progressive, or uncompressed) is also a factor in the quality of the final image.

Single-field resolutions work with smaller amounts of original image data than two-field or progressive resolutions. They use only half the image width of two-field resolutions, and they use only one of the two fields in the standard video signal.

For example, there is a 2:1 resolution for both single-field and two-field resolutions. In both cases, the image data is compressed to one-half of its original size. However, the image quality of these two resolutions is different. The single-field 2:1 resolution has lower image quality because it processes only one-quarter of the original image data used by the two-field 2:1 resolution.

Storage Requirements

You should plan the use of drive volumes in advance, especially when you capture numerous reels or tapes.

"Estimating Drive Space Requirements" on page 767 contains recommendations for achieving efficient storage for your digital media. It explains how playback performance can be affected by the way you set up the storage drives and target them when you capture.

Estimating Drive Space Requirements

You need to select a resolution that provides adequate picture quality for your project. However, you might be limited by the amount of media drive space available. Before you capture, estimate your media drive space requirements.

To estimate media drive space requirements:

1. Use the appropriate resolution specifications table, see "Resolution Specifications" on page 757, and the information in your media drive documentation to select a resolution that is compatible with the drive and striping capacity on your system.
2. Open the Capture tool, select a resolution and target drive or drives, and note the time remaining on the selected drives. See "Interpreting the Time-Remaining Display" in the Help.
3. Get a total duration for all the clips to be captured. Use the Console and the Get Bin Info commands, as described in "Getting Information with the Console" on page 86.
4. Use the appropriate estimated storage requirements table, see "Estimated Storage Requirements" on page 768, to estimate your drive space requirements based on the resolution and the number of audio tracks. To get an estimate of the number of gigabytes needed, do one of the following:
   - Calculate by dividing the duration of your material (number of minutes) by the estimated minutes per gigabyte.
   - Calculate by combining storage figures from the "Drive Space Needed for *x* Minutes of Media" columns as necessary to match the number of minutes of material you have.
5. Compare the gigabytes available on your drives with the result of step 4. If your needs are greater than your drive space, select a lower resolution and recalculate.

The information in the storage tables is approximate, so it's a good idea to slightly overestimate the amount of drive space you require.

Estimated Storage Requirements

The tables in the following topics show estimated drive space requirements for each resolution, including uncompressed. They show figures for estimated minutes per gigabyte and also figures for the drive space required for certain amounts of material.

Estimated Storage Requirements: HD

Before using this table, read the information in "Estimating Drive Space Requirements" on page 767.

This table does not include estimated storage requirements for audio.

Estimated Storage Requirements: HD

Resolution	Bits	Project Format	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media (GB)	Drive Space Needed for 10 Minutes of Media (GB)	Drive Space Needed for 30 Minutes of Media (GB)
1:1 10-bit HD	10	1080i/59.94	0.12	8.68	86.8	260.5
1:1 HD	8		0.14	6.95	69.5	208.4
DNxHD 220 X	10		0.65	1.54	15.4	46.1
DNxHD 220	8		0.65	1.54	15.4	46.1
DNxHD 145	8		1.00	1.00	10.0	30.4
DVCPRO HD	8		1.20	0.80	8.0	24.0
1:1 10-bit HD	10	720p/59.94	0.26	3.86	38.6	115.8
1:1 HD	8		0.32	3.09	30.9	92.6
DNxHD 220 X	10		0.65	1.54	15.4	46.1
DNxHD 220	8		0.65	1.54	15.4	46.1
DNxHD 145	8		1.00	1.00	10.0	30.4
DVCPRO HD	8		1.20	0.80	8.0	24.0
1:1 10-bit HD	10	1080i/50	0.14	7.24	72.4	217.3
1:1 HD	8		0.17	5.79	57.9	173.8
DNxHD 185 X	10		0.78	1.28	12.8	38.4
DNxHD 185	8		0.78	1.28	12.8	38.4
DNxHD 120	8		1.18	0.85	8.5	25.4
DVCPRO HD	8		1.20	0.80	8.0	24.0
1:1 10-bit HD	10	1080p/25	0.14	7.24	72.4	217.3
1:1 HD	8		0.17	5.79	57.9	173.8
DNxHD 185 X	10		0.78	1.28	12.8	38.4
DNxHD 185	8		0.78	1.28	12.8	38.4
DNxHD 120	8		1.18	0.85	8.5	25.4
DNxHD 36	8		3.97	0.25	2.5	7.5

Estimated Storage Requirements: HD (Continued)

Resolution	Bits	Project Format	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media (GB)	Drive Space Needed for 10 Minutes of Media (GB)	Drive Space Needed for 30 Minutes of Media (GB)
1:1 10-bit HD	10	1080p/23.976	0.14	6.95	69.5	208.4
1:1 HD	8		0.18	5.56	55.6	166.7
DNxHD 175 X	10		0.81	1.22	12.2	36.9
DNxHD 175	8		0.81	1.22	12.2	36.9
DNxHD 115	8		1.23	0.81	8.1	24.4
DNxHD 36	8		3.97	0.25	2.5	7.5
1:1 10-bit HD	10	720p/23.976	0.32	3.09	30.9	92.6
1:1 HD	8		0.40	2.47	24.7	74.1
DNxHD 90 X	10		1.63	0.61	6.1	18.4
DNxHD 90	8		1.63	0.61	6.1	18.4
DNxHD 60	8		2.46	0.41	4.1	12.2
DVCPRO HD	8		1.20	0.80	8.0	24.0
1:1 10-bit HD	10	1080p/24	0.14	6.95	69.5	208.6
1:1 HD	8		0.18	5.56	55.6	166.9
DNxHD 175 X	10		0.81	1.22	12.2	36.9
DNxHD 175	8		0.81	1.22	12.2	36.9
DNxHD 115	8		1.23	0.81	8.1	24.4
DNxHD 36	8		3.97	0.25	2.5	7.5

Estimated Storage Requirements: JFIF Interlaced

Before using this table, read the information in "Estimating Drive Space Requirements" on page 767.

Estimated Storage Requirements: JFIF Interlaced

Resolution	Audio Tracks	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
15:1s	0	48.5	20.6 MB	206 MB	618 MB
	1	38.6	25.9 MB	259 MB	777 MB
	2	32.1	31.2 MB	312 MB	936 MB
	3	28.2	35.5 MB	355 MB	1.07 GB
	4	24.5	40.8 MB	408 MB	1.22 GB
	8	16.1	62.0 MB	620 MB	1.86 GB
4:1s	0	11.6	85.8 MB	858 MB	2.57 GB
	1	11.0	91.1 MB	911 MB	2.73 GB
	2	10.5	95.4 MB	954 MB	2.86 GB
	3	9.9	101 MB	1.01 GB	3.03 GB
	4	9.4	106 MB	1.06 GB	3.18 GB
	8	7.9	127 MB	1.27 GB	3.81 GB
2:1s	0	5.8	172 MB	1.72 GB	5.16 GB
	1	5.7	177 MB	1.77 GB	5.28 GB
	2	5.5	182 MB	1.82 GB	5.46 GB
	3	5.4	187 MB	1.87 GB	5.61 GB
	4	5.2	193 MB	1.93 GB	5.79 GB
	8	4.7	214 MB	2.14 GB	6.42 GB
20:1	0	16.6	60.1 MB	601 MB	1.80 GB
	1	15.3	65.4 MB	654 MB	1.96 GB
	2	14.1	70.7 MB	707 MB	2.12 GB

Estimated Storage Requirements: JFIF Interlaced (Continued)

Resolution	Audio Tracks	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
	3	13.2	76.0 MB	760 MB	2.28 GB
	4	12.3	81.3 MB	813 MB	2.44 GB
	8	9.8	103 MB	1.03 GB	3.09 GB
10:1	0	8.3	120 MB	1.20 GB	3.60 GB
	1	7.9	126 MB	1.26 GB	3.78 GB
	2	7.6	131 MB	1.31 GB	3.93 GB
	3	7.3	136 MB	1.36 GB	4.08 GB
	4	7.2	140 MB	1.40 GB	4.20 GB
	8	6.2	161 MB	1.61 GB	4.83 GB
3:1	0	2.9	344 MB	3.44 GB	10.32 GB
	1	2.9	349 MB	3.49 GB	10.47 GB
	2	2.8	354 MB	3.54 GB	10.62 GB
	3	2.8	360 MB	3.60 GB	10.80 GB
	4	2.7	365 MB	3.65 GB	10.95 GB
	8	2.6	386 MB	3.86 GB	11.58 GB
2:1	0	1.9	516 MB	5.16 GB	15.48 GB
	1	1.9	521 MB	5.21 GB	15.63 GB
	2	1.9	526 MB	5.26 GB	15.78 GB
	3	1.9	531 MB	5.31 GB	15.94 GB
	4	1.9	537 MB	5.37 GB	16.11 GB
	8	1.8	558 MB	5.58 GB	16.74 GB
1:1 SD (Uncompressed)	0	0.8	1.22 GB	12.2 GB	36.6 GB
	1	0.8	1.23 GB	12.3 GB	36.9 GB

Estimated Storage Requirements: JFIF Interlaced (Continued)

Resolution	Audio Tracks	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
	2	0.8	1.23 GB	12.3 GB	36.9 GB
	3	0.8	1.24 GB	12.4 GB	37.2 GB
	4	0.8	1.24 GB	12.4 GB	37.2 GB
	8	0.8	1.26 GB	12.6 GB	37.8 GB
1:1 10b SD (10-bit Uncompressed)	0	0.6	1.53 GB	15.3 GB	45.9 GB
	1	0.6	1.54 GB	15.4 GB	46.2 GB
	2	0.6	1.54 GB	15.4 GB	46.2 GB
	3	0.6	1.55 GB	15.5 GB	46.5 GB
	4	0.6	1.55 GB	15.5 GB	46.5 GB
	8	0.6	1.58 GB	15.8 GB	47.4 GB

Estimated Storage Requirements: JFIF Progressive

Before using this table, read the information in "Estimating Drive Space Requirements" on page 767.

Estimated Storage Requirements: JFIF Progressive

Resolution	Audio Tracks	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
35:1	0	36.4 (NTSC) 30.3 (PAL)	27.5 MB 33.0 MB	275 MB 330 MB	824 MB 990 MB
	1	30.5 (NTSC) 26.1 (PAL)	32.8 MB 38.3 MB	328 MB 383 MB	983 MB 1.14 GB
	2	26.3 (NTSC) 22.9 (PAL)	38.1 MB 43.6 MB	381 MB 436 MB	1.14 GB 1.30 GB
	3	23.1 (NTSC) 20.4 (PAL)	43.4 MB 48.9 MB	434 MB 489 MB	1.30 GB 1.47 GB
	4	20.5 (NTSC) 18.4 (PAL)	48.7 MB 54.2 MB	487 MB 542 MB	1.46 GB 1.63 GB
	8	14.3 (NTSC) 13.3 (PAL)	69.9 MB 75.4 MB	699 MB 754 MB	2.10 GB 2.26 GB
28:1	0	29.1 (NTSC) 24.3 (PAL)	34.4 MB 41.2 MB	344 MB 412 MB	1.03 GB 1.23 GB
	1	25.2 (NTSC) 21.5 (PAL)	39.7 MB 46.5 MB	397 MB 465 MB	1.19 GB 1.39 GB
	2	22.2 (NTSC) 19.3 (PAL)	45.0 MB 51.8 MB	450 MB 518 MB	1.35 GB 1.55 GB
	3	19.9 (NTSC) 17.5 (PAL)	50.3 MB 57.1 MB	503 MB 571 MB	1.51 GB 1.71 GB
	4	18.0 (NTSC) 16.0 (PAL)	55.6 MB 62.4 MB	557 MB 624 MB	1.67 GB 1.87 GB
	8	13.0 (NTSC) 12.0 (PAL)	76.8 MB 83.6 MB	768 MB 836 MB	2.30 GB 2.51 GB

Estimated Storage Requirements: JFIF Progressive (Continued)

Resolution	Audio Tracks	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
14:1	0	14.6 (NTSC) 12.1 (PAL)	68.5 MB 82.6 MB	685 MB 826 MB	2.05 GB 2.48 GB
	1	13.6 (NTSC) 11.4 (PAL)	73.8 MB 87.9 MB	738 MB 879 MB	2.21 GB 2.64 GB
	2	12.6 (NTSC) 10.7 (PAL)	79.1 MB 93.2 MB	791 MB 932 MB	2.37 GB 2.80 GB
	3	11.8 (NTSC) 10.1 (PAL)	84.4 MB 98.5 MB	844 MB 985 MB	2.53 GB 2.96 GB
	4	11.1 (NTSC) 9.6 (PAL)	89.7 MB 103 MB	897 MB 1.04 GB	2.69 GB 3.12 GB
	8	9.0 (NTSC) 8.0 (PAL)	111 MB 125 MB	1.11 GB 1.25 GB	3.33 GB 3.75 GB
3:1	0	3.6 (NTSC) 3.0 (PAL)	278 MB 333 MB	2.78 GB 3.33 GB	8.33 GB 10.0 GB
	1	3.5 (NTSC) 3.0 (PAL)	283 MB 339 MB	2.83 GB 3.39 GB	8.49 GB 10.2 GB
	2	3.5 (NTSC) 2.9 (PAL)	288 MB 344 MB	2.88 GB 3.44 GB	8.65 GB 10.3 GB
	3	3.4 (NTSC) 2.9 (PAL)	294 MB 349 MB	2.94 GB 3.49 GB	8.81 GB 10.5 GB
	4	3.3 (NTSC) 2.8 (PAL)	299 MB 355 MB	2.99 GB 3.55 GB	8.97 GB 10.6 GB
	8	3.1 (NTSC) 2.7 (PAL)	320 MB 376 MB	3.20 GB 3.76 GB	9.61 GB 11.3 GB

Estimated Storage Requirements: JFIF Progressive (Continued)

Resolution	Audio Tracks	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
2:1	0	2.4 (NTSC) 2.0 (PAL)	417 MB 500 MB	4.17 GB 5.00 GB	12.5 GB 15.0 GB
	1	2.4 (NTSC) 2.0 (PAL)	422 MB 505 MB	4.22 GB 5.05 GB	12.7 GB 15.2 GB
	2	2.3 (NTSC) 2.0 (PAL)	427 MB 510 MB	4.27 GB 5.11 GB	12.8 GB 15.3 GB
	3	2.3 (NTSC) 1.9 (PAL)	433 MB 516 MB	4.33 GB 5.16 GB	13.0 GB 15.5 GB
	4	2.3 (NTSC) 1.9 (PAL)	438 MB 521 MB	4.38 GB 5.21 GB	13.1 GB 15.6 GB
	8	2.2 (NTSC) 1.8 (PAL)	459 MB 542 MB	4.59 GB 5.42 GB	13.8 GB 16.3 GB
1:1 SD (Uncompressed)	0	1.0 (NTSC) 0.9 (PAL)	1.00 GB 1.15 GB	10.0 GB 11.5 GB	30.0 GB 34.5 GB
	1	1.0 (NTSC) 0.9 (PAL)	1.01 GB 1.15 GB	10.1 GB 11.5 GB	30.3 GB 34.6 GB
	2	1.0 (NTSC) 0.9 (PAL)	1.01 GB 1.16 GB	10.1 GB 11.6 GB	30.3 GB 34.8 GB
	3	1.0 (NTSC) 0.9 (PAL)	1.02 GB 1.17 GB	10.2 GB 11.7 GB	30.6 GB 35.1 GB
	4	1.0 (NTSC) 0.9 (PAL)	1.02 GB 11.7 GB	10.2 GB 11.7 GB	30.6 GB 35.1 GB
	8	1.0 (NTSC) 0.8 (PAL)	1.04 GB 1.19 GB	10.4 GB 11.9 GB	31.3 GB 35.8 GB

Estimated Storage Requirements: JFIF Progressive (Continued)

Resolution	Audio Tracks	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
1:1 10b SD (10-bit Uncompressed)	0	0.8 (NTSC) 0.7 (PAL)	1.25 GB 1.44 GB	12.5 GB 14.4 GB	37.5 GB 43.2 GB
	1	0.8 (NTSC) 0.7 (PAL)	1.26 GB 1.44 GB	1.26 GB 14.4 GB	37.9 GB 43.2 GB
	2	0.8 (NTSC) 0.7 (PAL)	1.26 GB 1.45 GB	12.6 GB 14.5 GB	37.8 GB 43.5 GB
	3	0.8 (NTSC) 0.7 (PAL)	1.28 GB 1.46 GB	12.8 GB 14.6 GB	38.4 GB 43.8 GB
	4	0.8 (NTSC) 0.7 (PAL)	1.28 GB 1.46 GB	12.8 GB 14.6 GB	38.4 GB 43.8 GB
	8	0.8 (NTSC) 0.7 (PAL)	1.30 GB 1.49 GB	13.0 GB 14.9 GB	39.0 GB 44.7 GB

Estimated Storage Requirements: DV

The following table provides information to help you estimate the storage requirements for DV media.

Before using this table, read the information in "Estimating Drive Space Requirements" on page 767.

This table does not include estimated storage requirements for audio.

Estimated Storage Requirements: DV

Resolution (NTSC and PAL)	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
DV 25	5.0	200 MB	2.0 GB	6.0 GB
DV 50	2.5	400 MB	4.0 GB	12.0 GB
DVCPRO HD	1.2	800 MB	8.0 GB	24.0 GB

Estimated Storage Requirements: MPEG

The following table provides information to help you estimate the storage requirements for MPEG media.

Before using this table, read the information in "Estimating Drive Space Requirements" on page 767.

This table does not include estimated storage requirements for audio.

Estimated Storage Requirements: MPEG

Resolution (NTSC and PAL)	Minutes Per Gigabyte	Drive Space Needed for 1 Minute of Media	Drive Space Needed for 10 Minutes of Media	Drive Space Needed for 30 Minutes of Media
MPEG 30	4.7	210 MB	2.1 GB	6.3 GB
MPEG 40	3.6	280 MB	2.8 GB	8.4 GB
MPEG 50	2.9	350 MB	3.5 GB	10.5 GB

Maximizing Drive Space

If your media drive space is limited or you are capturing a large amount of source material, follow these suggestions to maximize your usage of the media drive space:

- Capture only the audio channels required for the edit.
- Log in advance. Batch capture only the footage required for the edit.
- Capture at a lower resolution for editing. Recapture only the clips included in the final cut at a higher resolution.

For more information on batch capturing and recapturing, see "Batch Capturing from Logged Clips" in the Help.

Managing Storage to Improve Playback Performance

The way you set up the media drives and target them when you capture can affect playback performance. Here are some suggestions for working with complex video images at high resolution, multiple video layers, or multicamera material:

- For more effective playback of multiple streams of video at higher resolutions, stripe the media drives. Some resolutions *require* drive striping; see the drive striping tables for your Avid editing application at Avid's online Knowledge Base. Go to www.avid.com/onlinesupport and search for "Drive Striping Tables."
- For more effective playback of multiple streams of video at higher resolutions without drive striping, distribute the video tracks as evenly as possible among available drives, and target separate drives for audio and video.
- Try to target one volume per reel.

Chapter 21
Working in a Film Project

This section presents suggested workflows and other information that can help you plan your film-originated project. This chapter includes the following topics:

- Working with 24p Media
- Working with 25p Media
- Planning a 24p or 25p Project
- Planning a 23.976p NTSC Project
- Film Project Considerations
- Understanding the Film-to-Tape Transfer Process
- Transferring 24-fps Film to NTSC Video
- Transferring 24-fps Film to PAL Video
- How Avid Editing Applications Store and Display 24p and 25p Media
- Film-to-Tape Transfer Guidelines
- Film-to-Tape Transfer Options

For information about working with film source footage transferred to HD, see “Working with HD Media” in the Help.

Working with 24p Media

With DTV (digital television) formats expanding the options for content distribution, there is renewed interest in the oldest format in the industry: 24-fps film. In addition to its common, worldwide format, film provides the highest resolution master for archiving purposes. Through a telecine transfer and the capturing process, Avid editing applications capture and store film frames as 24-fps progressive media, or 24p.

Progressive media is composed of single frames, each of which is vertically scanned as one pass. Avid editing applications create 24p media by combining (deinterlacing) two video fields into a single full, reconstructed frame. For NTSC film-to-tape transfers, Avid applications creates 24p media by removing the extra fields inserted by the 2:3 pulldown process and by creating progressive frames.

For more information about the film-to-tape transfer process, see "Understanding the Film-to-Tape Transfer Process" on page 808.

Working in 24p simplifies digital editing of film or other 24-fps-originated content, such as HDTV video that has been downconverted to ITU-R 601 digital video. In addition, 24p media requires less storage and processing power than 30-fps media. Because 24p provides a common production format for multiversion, multiformat delivery, it promises to become the new universal format for all film and video content.

For more information, see "How Avid Editing Applications Store and Display 24p and 25p Media" on page 815.

Working with 25p Media

The 25p format is primarily for use in countries where PAL video is standard. When you transfer 25-fps film footage to 25-fps PAL video, no modifications are necessary due to matching frame rates.

The 25-fps feature provides the following advantages:

- Simultaneous input of video and audio in sync
- Frame-accurate ink number tracking
- Digital cut recording directly to videotape
- Frame-accurate cut lists and change lists
- Frame-accurate audio EDLs for online editing of audio tracks
- Frame-accurate EDLs for assembling footage from the transfer or for preparing an online show master

The source for 25p is typically 25-fps film or 25-fps HDTV format. The methods for creating and storing 25p media are the same as for 24p. For an example of a 25p project workflow, see "25-fps Film or HD Video Source, SDTV Downconversion, Multiformat Output" on page 790.

You can capture the audio directly from the original Nagra reels or DAT tapes, and sync within your Avid editing application. For more information, see "Audio Transfer Options for 24p PAL Projects" on page 794.

Planning a 24p or 25p Project

A 24p or 25p project is one that uses 24p or 25p media, which is created and stored in your Avid editing application. In most cases, the source footage is film shot at 24 fps (for 24p) or 25 fps (for 25p), but new technology is introducing 24p and 25p videotape formats, both for cameras and VTRs. For 24p or 25p videotape, you need to use a 24p VTR to downconvert the high-definition format of HDTV to SDTV digital video for capturing by your Avid editing application. (The 24p cameras and VTRs can typically work with either 24p or 25p footage.)

The following sections describe two possible workflows for 24p projects:

- "24-fps Film Source, SDTV Transfer, Multiformat Output" on page 782
- "24-fps Film or HD Video Source, SDTV Downconversion, Multiformat Output" on page 786

For information about a typical 25p workflow, see "25-fps Film or HD Video Source, SDTV Downconversion, Multiformat Output" on page 790.

For information about 24p PAL workflows, see "Audio Transfer Options for 24p PAL Projects" on page 794.

For film productions that screen dailies, the paths might be somewhat different. For more information, see "Viewing Dailies" on page 805.

For information about editing and outputting HD media, see "HDTV Workflows" on page 823.

24-fps Film Source, SDTV Transfer, Multiformat Output

The workflows shown in the following figures illustrate possible paths for film footage shot at the standard 24 fps, transferred to SDTV video, and captured at 24 fps. The first figure shows the offline stage of the workflow, using a Media Composer or Film Composer system. The second figure shows the online stage, using an Avid Symphony Nitris system, film-tape-film-tape relinking (FTFT), and multiple output formats.

With this workflow, the sound recording is synchronized as part of the telecine transfer. For alternative audio workflows, see "Audio Transfer Options for 24p PAL Projects" on page 794.

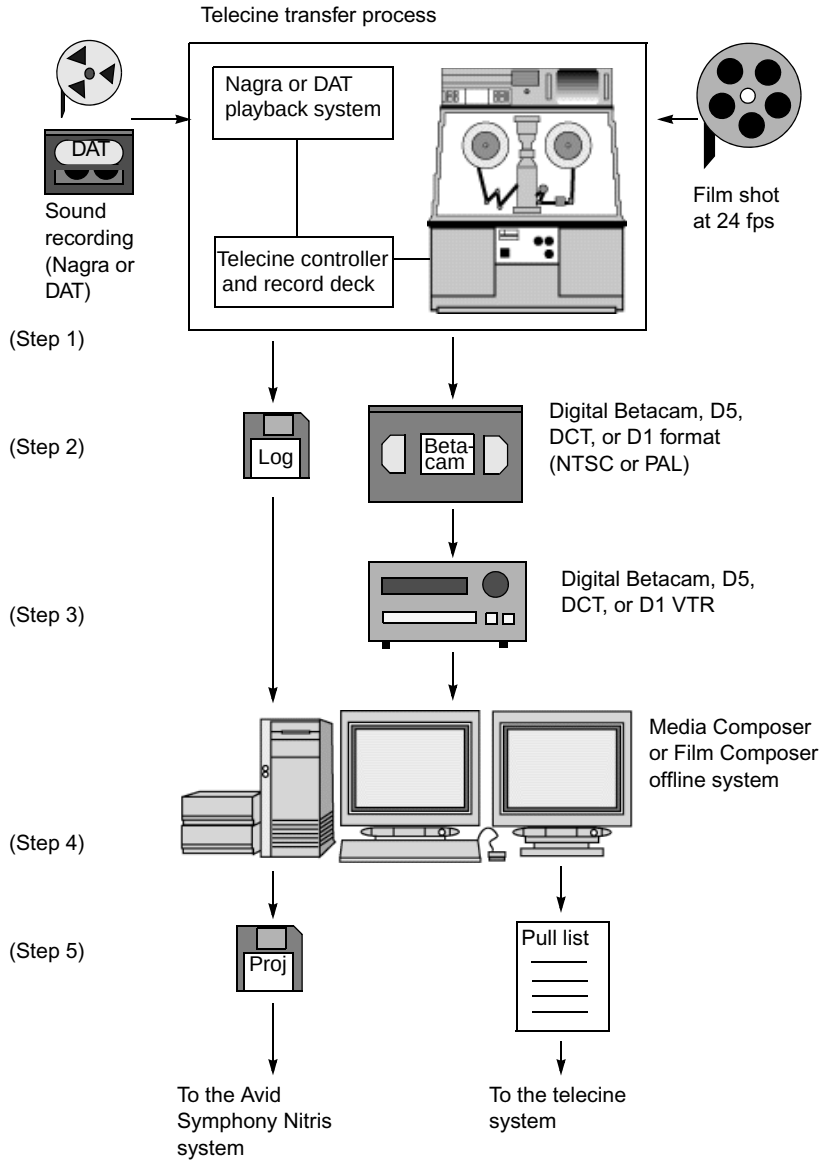
For details on the telecine transfer process, see "Film-to-Tape Transfer Guidelines" on page 817.

For information about editing and outputting HD media, see "HDTV Workflows" on page 823.

The following steps describe the offline stage of the workflow for 24-fps Film Source with SDTV Transfer:

1. The telecine process uses one-light or best-light transfer and syncs picture and sound to create ITU-R 601 video. The process adds 2:3 pulldown to film footage to create an NTSC videotape, or uses 4.1% speedup for PAL videotape. The telecine process also creates a shot log (for example, a FLEX file).
2. Convert the shot log file with Avid Log Exchange (ALE), then import the shot log file into Media Composer or Film Composer to create a bin or bins.
3. Batch capture the footage in an offline resolution, based on the shot log. The Avid system removes the 2:3 pulldown and creates 24p media.
4. Edit at 24 fps, apply Pan and Scan and other effects, and create a final sequence.
5. Create a floppy disk with project information for transfer to the Avid Symphony Nitris online system. Create a 24p pull list for another telecine process, to retransfer footage used in the final edit.

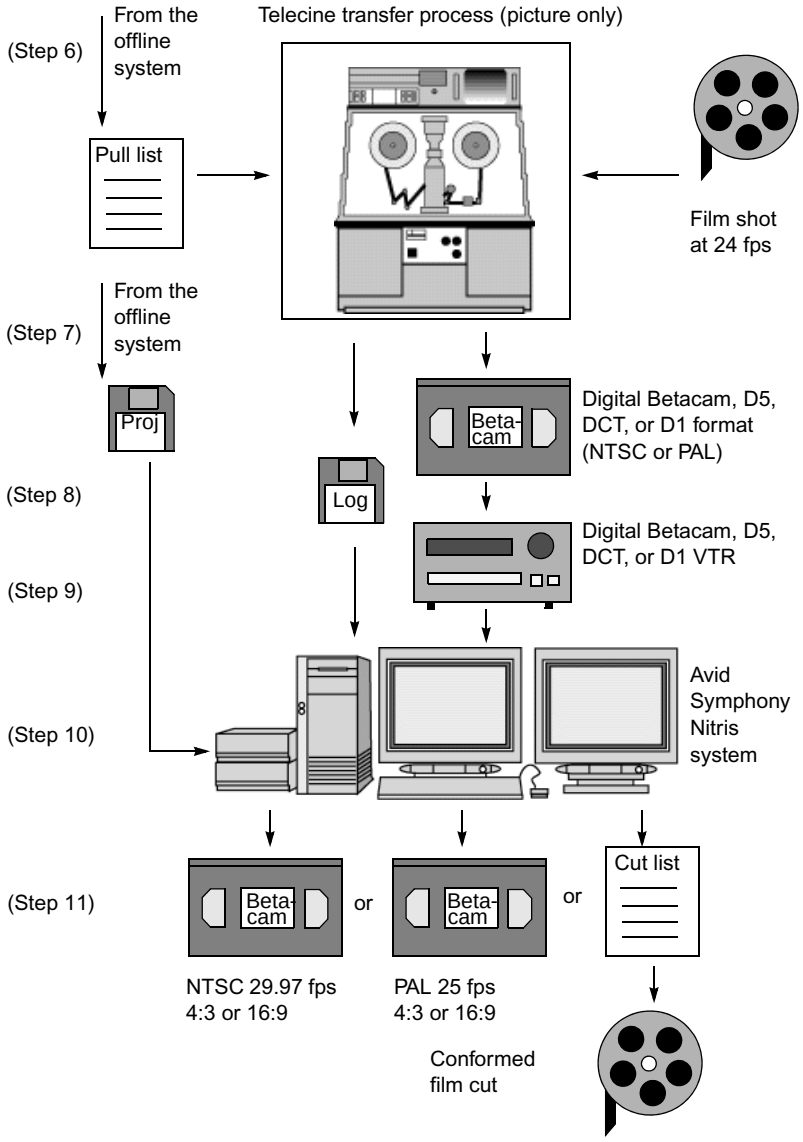
Offline Workflow: 24-fps Film Source, SDTV Transfer



The following steps describe the online stage of the workflow for 24-fps Film Source with SDTV Transfer:

6. The telecine process uses the pull list and a full color-corrected transfer to create NTSC or PAL videotape with selects from the original negative (picture only). The process also creates a new shot log file.
7. Copy the project information from the floppy disk to the Symphony Nitris online system.
8. Convert the new shot log with ALE and import it into the Symphony Nitris system.
9. Batch capture in an online resolution, based on the new shot log file.
10. Relink the sequence and clips by key numbers (FTFT) and complete any other finishing.
11. Generate multiple formats. For NTSC and PAL, the system reinserts the pulldown or re-creates the speedup. For conforming film, it creates a 24p cut list.

Online Workflow: 24-fps Film Source, SDTV Transfer, Multiformat Output



24-fps Film or HD Video Source, SDTV Downconversion, Multiformat Output

This workflow is based on film or video footage shot at 24 fps and planned for HDTV (high-definition television). Different workflows are being developed for this new technology, which includes 24p tape formats, VTRs, and cameras. This workflow presents one possible path.

"Offline Workflow: 24-fps Film Source, SDTV Transfer" on page 783 shows the offline stage of the workflow, using a Media Composer or Film Composer system. "Online Workflow: 24-fps Film Source, SDTV Transfer, Multiformat Output" on page 785 shows the online stage, using a Avid Symphony Nitris system with Universal Mastering and multiple output formats.

With this workflow, the sound recording is synchronized as part of the telecine transfer. For alternative audio workflows, see "Audio Transfer Options for 24p PAL Projects" on page 794.

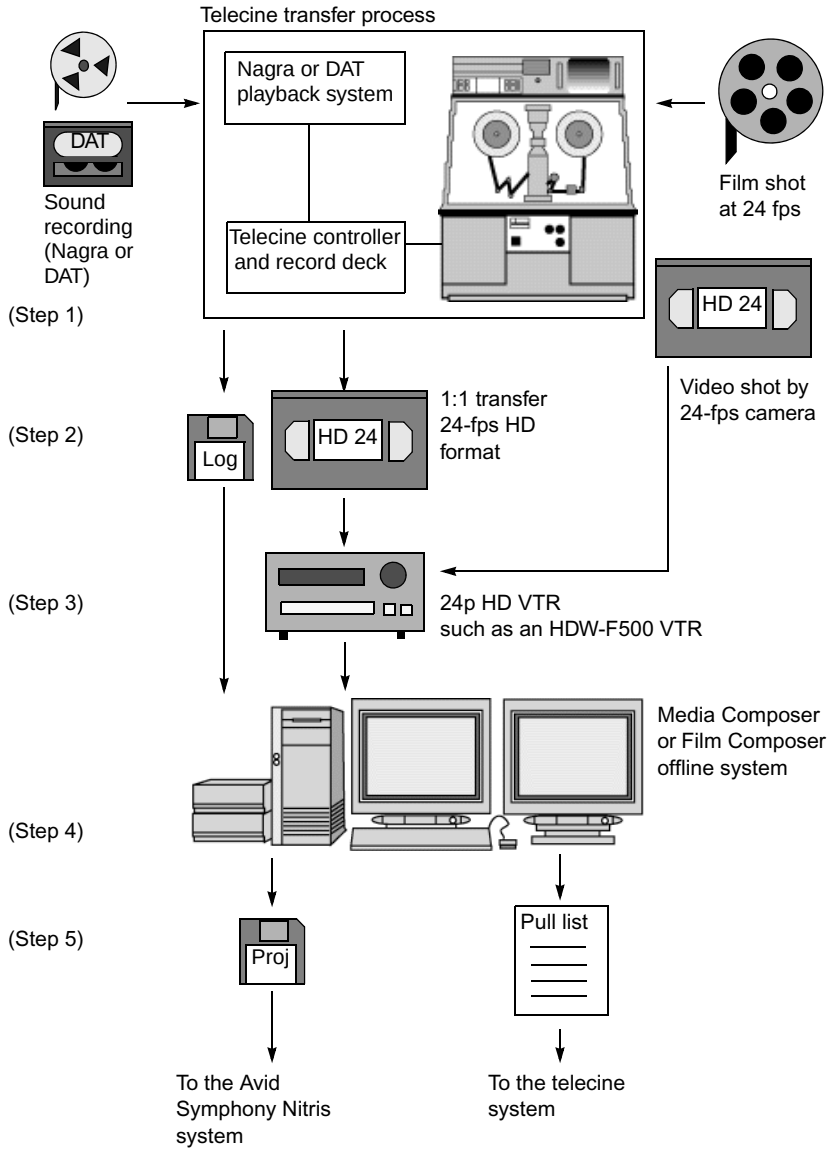
For details on the telecine transfer process, see "Film-to-Tape Transfer Guidelines" on page 817.

For information about editing and outputting HD media, see "HDTV Workflows" on page 823.

The following steps describe the offline stage of film or video footage shot at 24 fps and planned for HDTV:

1. Source videotape comes either from a telecine transfer or a 24-fps video camera. The telecine process transfers 24-fps film footage at 1:1 (no pulldown). It also creates a shot log (for example, a FLEX file).
2. For telecine transfer projects, convert the shot log file with ALE and import it into Media Composer or Film Composer to create a bin or bins.
3. Batch capture the footage in an offline resolution, based on the shot log. Use a 24p deck to downconvert HDTV to ITU-R 601 video. The deck adds 2:3 pulldown (NTSC) or 4.1% speedup (PAL). The Avid system removes the extra pulldown fields and creates 24p media.
4. Edit at 24 fps, apply Pan and Scan or other effects, and create a final sequence.
5. Create a 24p pull list for another telecine process, to retransfer footage used in the final edit. Create a floppy disk with project information for transfer to the Avid Symphony Nitris online system

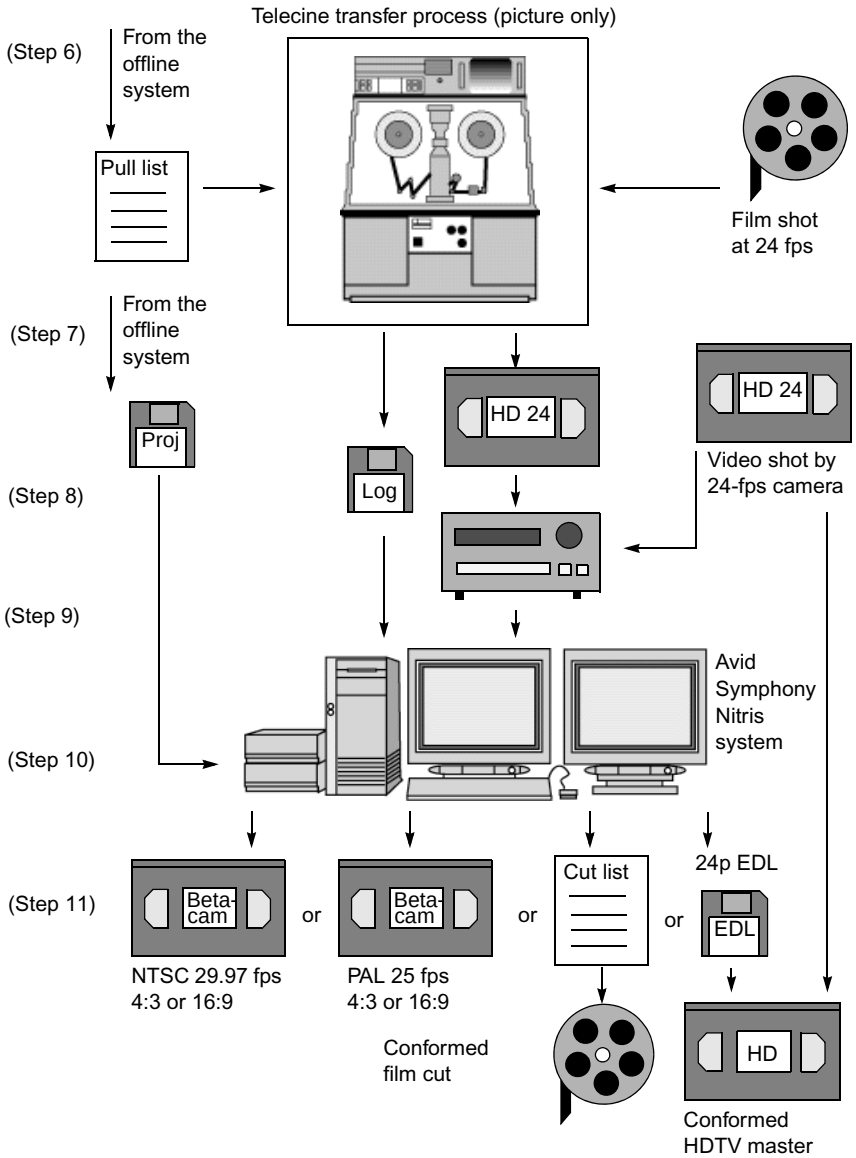
Offline Workflow: 24-fps Film or HDTV Source SDTV Downconversion



The following steps describe the online stage of film or video footage shot at 24 fps and planned for HDTV:

6. For film-originated projects, the telecine process uses the pull list and full color-corrected transfer to create HDTV videotape with selects from the original negative (picture only). The process also creates a new shot log file.
7. Copy the project information to the Symphony Nitris online system.
8. For telecine transfer projects, convert the new shot log file with ALE and import it into the Symphony Nitris system.
9. Batch capture in an online resolution, based on the new shot log file. Downconvert either the telecine transfer tape or HDTV source tape.
10. Relink the sequence and clips by key numbers (FTFT) and complete any other finishing.
11. Generate multiple formats for output. For NTSC and PAL, the Avid Symphony Nitris system reinserts pulldown or re-creates the speedup. For conforming film, it creates a 24p cut list. For HDTV, it creates a 24p EDL for use in an online suite.

Online Workflow: 24-fps Film or HDTV Source, SDTV Downconversion, Multiformat Output



25-fps Film or HD Video Source, SDTV Downconversion, Multiformat Output

This workflow is based on film or video footage shot at 25 fps and planned for HDTV (high-definition television). Different workflows are being developed for this new technology, which includes 25p tape formats, VTRs, and cameras. This workflow presents one possible path.

"Offline Workflow: 25-fps Film or HDTV Source, SDTV Downconversion" on page 791 shows the offline stage of the workflow, using a Media Composer or Film Composer system. "Online Workflow: 25-fps Film or HDTV Source, SDTV Downconversion, Multiformat Output" on page 793 shows the online stage, using a Symphony Nitris system with Universal Mastering and multiple output formats.

With this workflow, the sound recording is synchronized as part of the telecine transfer. For more information about capturing and synchronizing audio, see "Audio Transfer Options for 24p PAL Projects" on page 794.

For NTSC output this method slows the audio by 4 percent. If you plan to output to both NTSC and PAL, you might want to shoot at 24 fps and use 24p instead of 25p.

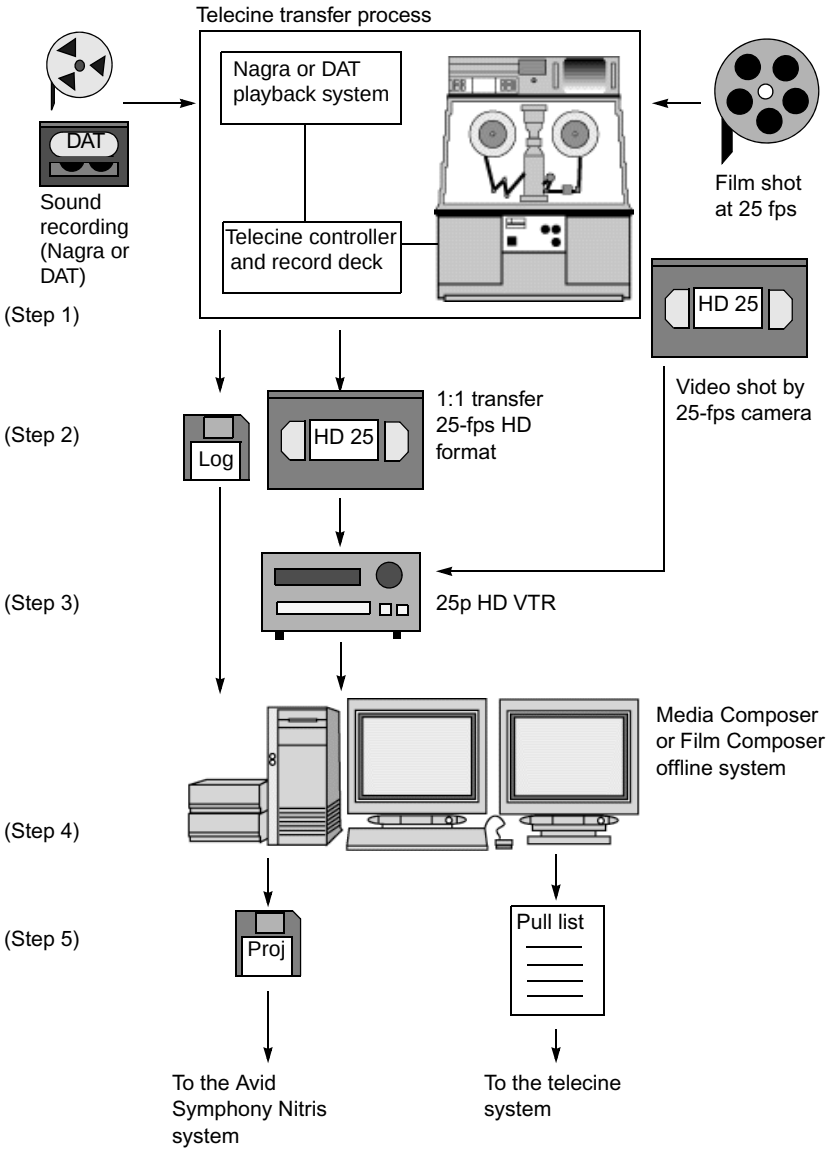
For details on the telecine transfer process, see "Film-to-Tape Transfer Guidelines" on page 817.

For information about editing and outputting HD media, see "HDTV Workflows" on page 823.

The following steps describe the offline stage of film or video footage shot at 25 fps and planned for HDTV:

1. Source videotape comes either from a telecine transfer or a 25-fps video camera. The telecine process transfers 25-fps film footage at 1:1 (no pulldown). It also creates a shot log (for example, a FLEX file).
2. For telecine transfer projects, convert the shot log file with ALE and import it into Media Composer or Film Composer to create a bin or bins.
3. Batch capture the footage in an offline resolution, based on the shot log. Use a 25p deck to downconvert HDTV to ITU-R 601 video. The deck does not need to add pulldown or speed up the audio since the footage will remain at 25 fps. The Avid system creates 25p media.
4. Edit at 25 fps, apply Pan and Scan or other effects, and create a final sequence.
5. Create a 25p pull list for another telecine process, to retransfer footage used in the final edit. Create a floppy disk with project information for transfer to the Symphony Nitris online system.

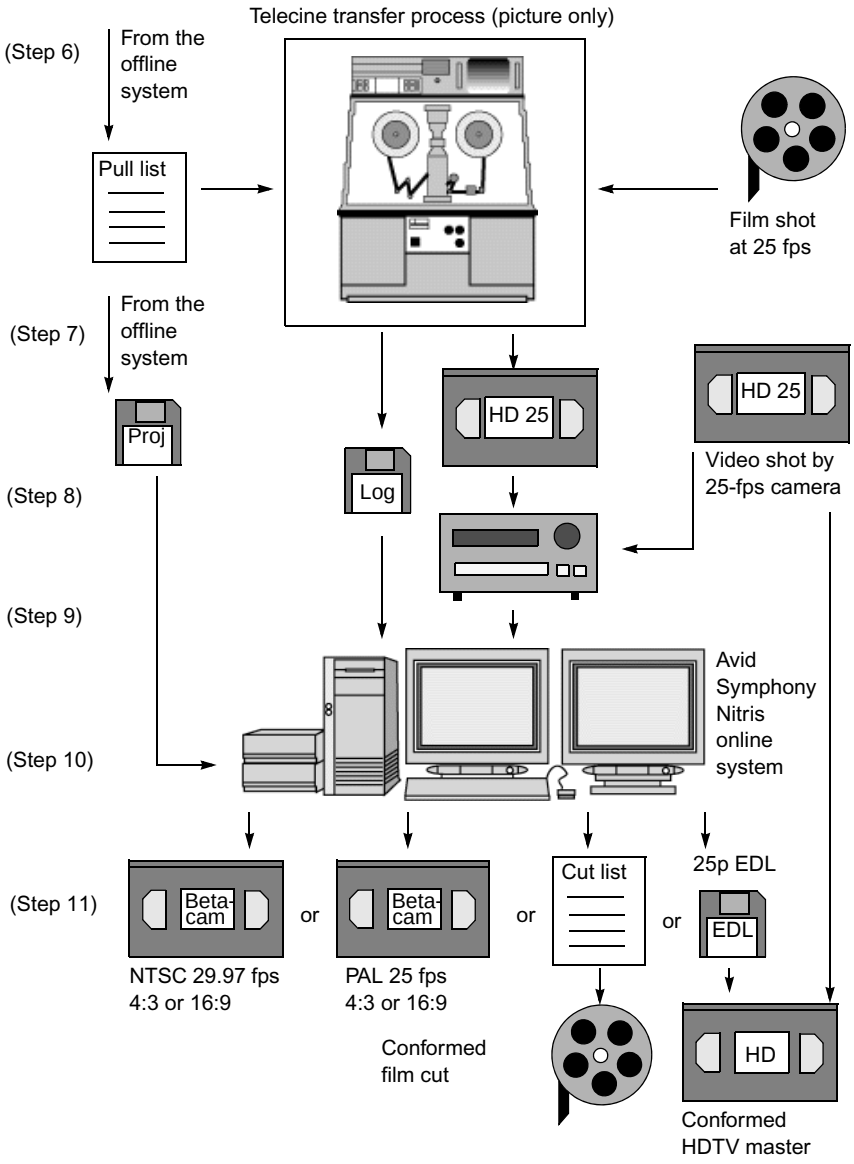
Offline Workflow: 25-fps Film or HDTV Source, SDTV Downconversion



The following steps describe the online stage of film or video footage shot at 25 fps and planned for HDTV:

6. For film-originated projects, the telecine process uses the pull list and full color-corrected transfer to create HDTV videotape with selects from the original negative (picture only). The process also creates a new shot log file.
7. Copy the project information to the Avid Symphony Nitris system.
8. For telecine transfer projects, convert the new shot log file with ALE and import it into the Symphony Nitris system.
9. Batch capture in an online resolution, based on the new shot log file. Downconvert either the telecine transfer tape or HDTV source tape.
10. Relink the sequence and clips by key numbers (FTFT) and complete any other finishing.
11. Generate multiple formats for output. For NTSC, the system inserts 2:3 pulldown and slows down the audio by 4%. No adjustment is needed for PAL. For film, it creates a 25p cut list. For HDTV, it creates a 25p EDL for use in an online suite

Online Workflow: 25-fps Film or HDTV Source, SDTV Downconversion, Multiformat Output



Audio Transfer Options for 24p PAL Projects

When you create a 24p PAL project, you must specify the appropriate audio transfer rate for the project. (This is not necessary for a 25p PAL project because there is no film speedup during the transfer.) The New Project dialog box provides Audio Transfer options that allow you to select either Film Rate or Video Rate. This value is project specific and should not be changed after you create the project unless you have a specific element that you need to transfer at a different rate.

The Audio Transfer options are also located in the Film and 24p Settings dialog box and can be changed after the project is created. See "Settings for Film and 24p Projects" on page 140.

The Audio Transfer options are:

- **Film Rate (100%)**: Select this option when your 24-fps film footage has been transferred MOS (roughly translated as "without sound") to 25 fps by speeding up the film, and the audio comes in separately at 100 percent of the actual speed (PAL Method 2).
- **Video Rate (100%+)**: Select this option when your 24-fps film footage has been transferred to 25 fps by speeding up the film, and the audio is synchronized to the video picture. This means that the audio speed is increased by 4.1 percent (PAL Method 1).

The Info tab in the Project window allows you to view the audio transfer rate you selected when you created the project. The actual audio transfer rate might be different from the display if you used the Film and 24p Settings dialog box to change the audio transfer rate.

Planning a 23.976p NTSC Project

Avid editing systems that include 24p support include a 23.976p NTSC project type. This project type is especially designed for capture and output of digital audio that has been transferred or recorded at 48 kHz, in sync with picture at 23.976 fps. A 23.976p project lets you maintain digital standards for all NTSC input and output at 23.976 fps.

Select this project type for one of the following reasons:

- Your film and audio sources have been synced in the telecine process and transferred to Digital Betacam® or other digital videotape formats. Audio from digital videotapes can now be directly input and output through the AES/EBU connections on the Avid Adrenaline.

- Your audio and video sources have been shot at a camera rate of 23.976 fps. This rate is used for film (film-based television) or 24p HD video (television or feature film). These sources can be downconverted to standard NTSC without further audio slowdown. Audio recorded at 48 kHz can remain at 48 kHz throughout the project.
- This rate is also used for film (film-based television) or 24p HD video (television or feature film). These sources can be downconverted to standard NTSC without further audio slowdown. Audio recorded at 48 kHz can remain at 48 kHz throughout the project.

The 23.976 fps frame rate is sometimes referred to as 23.97 fps or 23.98 fps.

The 23.976 fps frame rate is in direct proportion to the NTSC broadcast frame rate of 29.97 fps, which is used for film-to-tape transfer to the Avid editing system. For more information, see *"Transferring 24-fps Film to NTSC Video" on page 808.*

Working in a 23.976p NTSC Project

The following sections describe how working in a 23.976p project affects tools and settings.

Creating a 23.976p Project

To create a 23.976p project:

1. Click New Project in the Select User and Project dialog box.
2. Type the name of your new project in the text box.
3. Select Format > 23.976p NTSC.
4. If the source tapes were transferred from film, select the Film option, and select a default film-gauge format.

   If the source tapes were shot as video (such as 1080p/24 HD recorded at 23.976 fps), do not select the Film option.
5. Click OK.

Film and 24p Settings

The Edit Play Rate and Audio Source Tape TC Rate options do not appear in the Film and 24p Settings dialog box. Edit Play Rate is automatically set at 23.976 fps. The Audio Source Tape TC Rate does not apply to 23.976p projects because you cannot capture 30 fps audio in a 23.976p project.

Capturing

Audio from digital videotapes can be directly input and output through the AES/EBU connections on the Avid Adrenaline.

The pulldown indicator on the Avid Adrenaline never lights when working in a 23.976p project.

The pulldown switch in the Capture tool is not used and does not appear.

Bins

The FPS column displays 23.976 rounded up to 23.98.

Import

Audio you import must be in sync with picture at 23.976 fps.

Digital Cut Tool

All output play rates are available, but only 23.976 NTSC maintains the original audio quality. For 23.976 NTSC, the audio rate is not slowed down for output and remains at 48 kHz. For 29.97 NTSC, the audio rate is sped up 25 percent and is not usable. Use this output rate for animations and other special applications. 24 fps NTSC, 24 fps PAL, and 25 fps PAL all require a sample-rate conversion, so high-quality audio is not guaranteed. For more information about output audio rates, see "Selecting Output Formats for 23.976p, 24p, and 25p Projects" on page 568.

23.976-fps Film Transfer or HD Video Source, SDTV Downconversion, Multiformat Output

This workflow is based on film transferred at 23.976 or video footage shot at 23.976 fps and planned for HDTV (high-definition television). This workflow presents one possible path.

"Offline Workflow: 23.976-fps Film Transfer or HDTV Source, SDTV Downconversion" on page 798 shows the offline stage of the workflow, using a Media Composer or Film Composer system. "Online Workflow: 23.976-fps Film Transfer or HDTV Source, SDTV Downconversion, Multiformat Output" on page 800 shows the online stage, using an Avid Symphony Nitris system with Universal Mastering and multiple output formats.

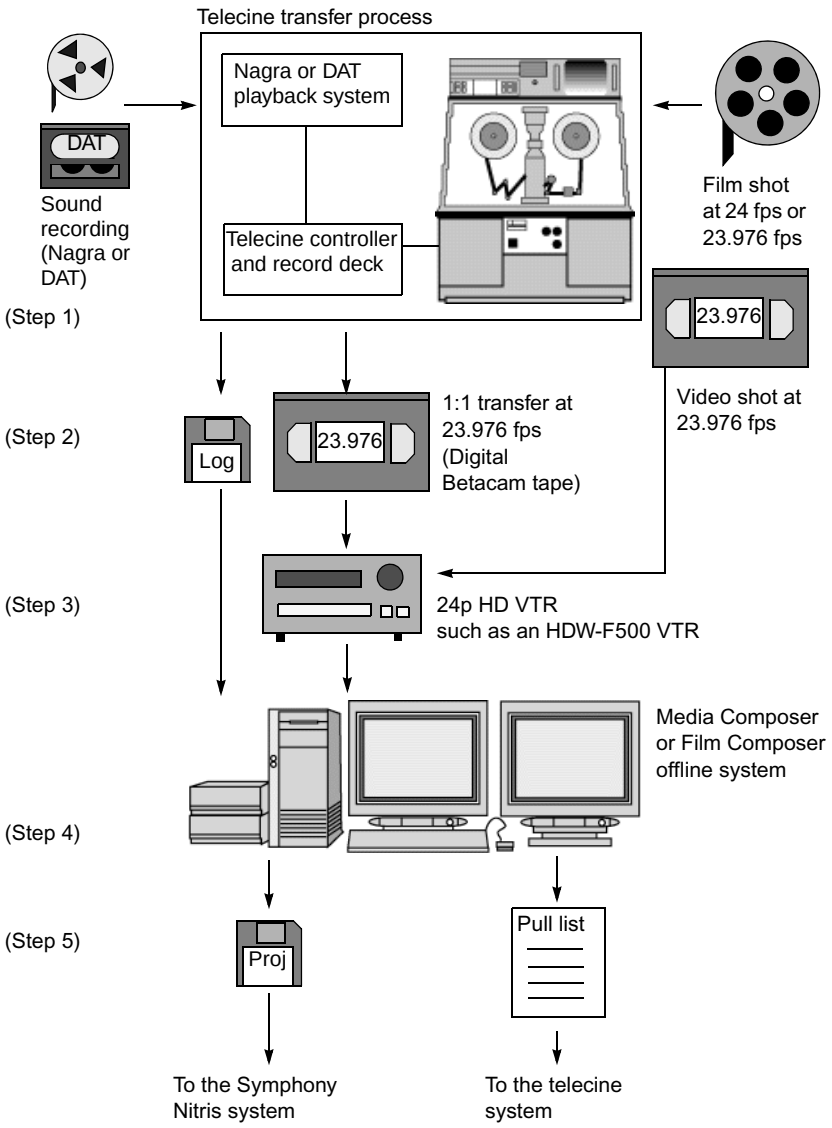
With this workflow, the sound recording is synchronized as part of the telecine transfer. For a workflow in which video and audio are captured separately, see "NTSC Audio and Video Captured Separately (23,976p Project)" on page 802.

For details on the telecine transfer process, see “Film-to-Tape Transfer Guidelines” on page 817.

The following steps describe the offline stage of film transferred at 23.976 or video footage shot at 23.976 fps and planned for HDTV.

1. Source videotape comes either from a telecine transfer or video shot at 23.976. The telecine process syncs audio and transfers film footage at 1:1 (no pulldown). It also creates a shot log.
2. For telecine transfer projects, convert the shot log file with ALE and import it into Media Composer or Film Composer to create a bin or bins.
3. Batch capture the footage in an offline resolution. Use a 24p deck to downconvert HDTV to ITU-R 601 video. The deck adds 2:3 pulldown for video but maintains audio at 48 kHz. The Avid system removes the extra video pulldown fields, maintains audio at 48 kHz, and creates 23.976p media.
4. Edit at 23.976 fps, apply Pan and Scan or other effects, and create a final sequence.
5. For film, create a pull list for another telecine process, to retransfer footage used in the final edit. Create a floppy disk with project information for transfer to the Symphony Nitris online system.

Offline Workflow: 23.976-fps Film Transfer or HDTV Source, SDTV Downconversion



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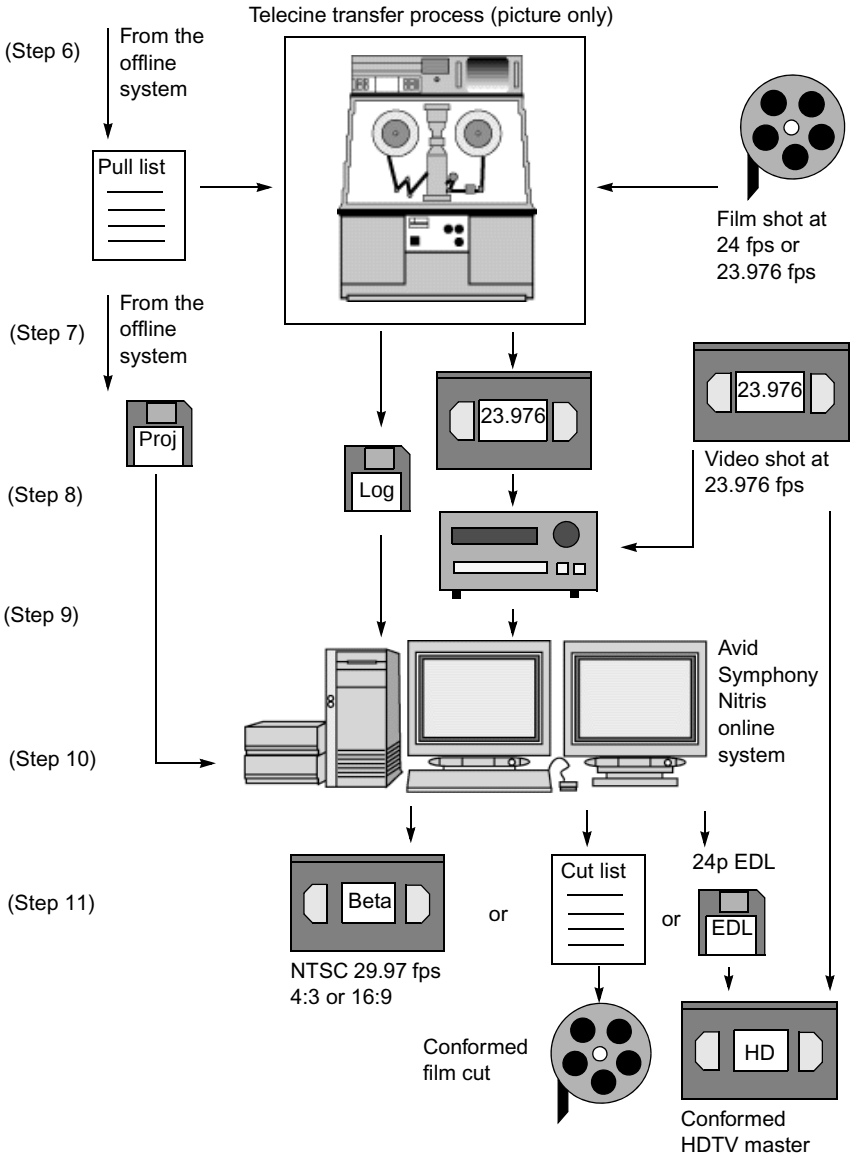
The following steps describe the online stage of film transferred at 23.976 or video footage shot at 23.976 fps and planned for HDTV.

6. For film-originated projects, the telecine process uses the pull list and full color-corrected transfer to create videotape with selects from the original negative (picture only). The process also creates a new shot log file.
7. Copy the project information to the Symphony Nitris online system.
8. For telecine transfer projects, convert the new shot log file with ALE and import it into the Symphony Nitris system.
9. Batch capture in an online resolution, based on the new shot log file. Downconvert either the telecine transfer tape or HDTV source tape.
10. For film, relink the sequence and clips by key numbers and complete any other finishing.
11. Generate multiple formats for output. For NTSC video, the Symphony Nitris system reinserts pulldown. For conforming film, it creates a 24p cut list. For HDTV, it creates a 24p EDL for use in an online suite.

Online Workflow: 23.976-fps Film Transfer or HDTV Source, SDTV Downconversion, Multiformat Output

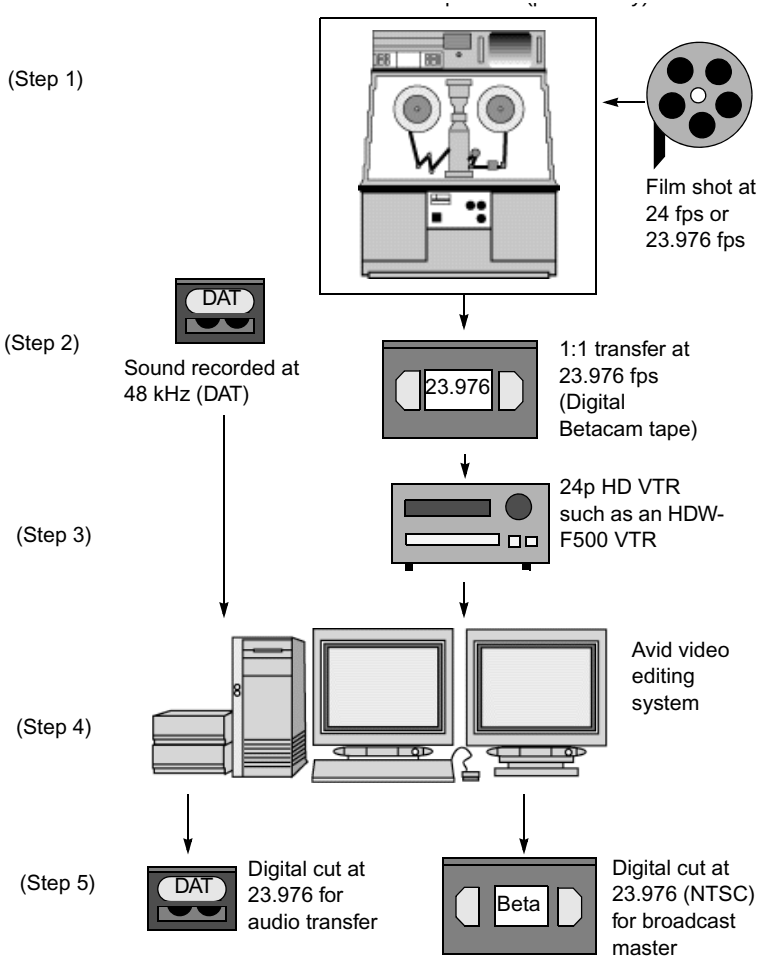


The following steps describe the online stage of NTSC audio and video captured separately (23,976p project) illustrates a workflow in which you capture audio and video separately, and then synchronize them in the Avid system.

The steps include:

1. The telecine process transfers film footage at 1:1 (no pulldown). For film shot at 24 fps, the process slows the film speed to 23.976 fps (labeled 24 fps).
2. Capture the audio into the Avid system (no pulldown). Field audio should be recorded at 48 kHz. If shot at 48.048 kHz, it must be referenced to 48 kHz outside of the Avid system.
3. Capture the picture footage in the Avid system. Use a 24p deck to downconvert to ITU-R 601 video. The deck adds 2:3 pulldown for video. The Avid system removes the extra video pulldown fields and creates 23.976p media.
4. Use the AutoSync feature to sync picture and sound. Edit and finish at 23.976p.
5. Select one or more outputs, depending on your project needs.

NTSC Audio and Video Captured Separately (23,976p Project)



Limitations for 23.976p Projects

You should be aware of the following limitations when you are planning a 23.976p project:

- For film projects shot at 24 fps, audio must be “pulled down” or “slowed down” before it can be captured into a 23.976p project. The user does not have the choice of capturing non-pulled-down audio. Unlike 24p NTSC projects, where the audio pulldown switch can be set to 1.0 or 0.99 to support either 24 fps or 23.976 fps, 23.976p projects do not use the audio pulldown switch. These 23.976p projects can only support 48 kHz audio that is in sync with 23.976-fps picture on a 29.97-fps transfer tape.
- Media created in 24p projects and media created in 23.976p projects are not compatible. If you start working in one type of project and then decide to switch to the other, you need to recapture all video and audio media. You cannot relink video media or audio media across the two project types.
- OMF and AAF files that are output from a 23.976p project look slightly different from those from a 24p project. The edit rates will show up as 23.976 fps in these files.

Because of the way project information is stored, previous versions of Avid editing systems do not recognize 23.976p projects as being different from 24p projects. You can open 23.976p projects in previous versions, however, none of the media can play because of the different internal edit rates. Projects are not corrupted by opening them in older versions of the software (unless you try to modify clips or edit sequences). If necessary, you can recapture the media in the 24p project.

Film Project Considerations

This section presents information that could be useful when planning film projects that you plan to edit on an Avid system.

Film Shoot Specifications

Use the guidelines in the following table to help you plan for film shoots.

Film Shoot Specifications

Element	Supported Formats	Notes
Film type	16mm	Use Standard 16mm or Super 16mm. Super 16's aspect ratio closely matches 16:9.
	35mm: 2, 3, 4, and 8 perf 65mm: 5, 8, 10, and 15 perf	16mm, 35mm 4 perf, and 35mm 3 perf are supported as projects in the Avid system. The remaining formats are supported through ink numbers and auxiliary ink numbers, which you select in the Film and 24p Settings dialog box. For more information, see "Film and 24P Settings" on page 687.
Film wind	B-wind	Always use camera rolls with key numbers in ascending order.
Audio media	1/4-inch audiotape (Nagra)	Use to record analog audio.
	DAT or DA88 (digital audiotape)	Use to record digital audio.
Audio timecodes	30-fps drop-frame or non-drop-frame	Use for NTSC transfer projects, and for generating audio EDLs.
	25-fps timecode	Use for PAL transfer projects, and for generating audio EDLs in the PAL format.
	Audio sync to in-camera timecode (Arri® 24-fps timecode)	Use for automatic syncing of sound with picture in the Avid system.
Sync methods	Clapsticks	Use for manual syncing of sound with picture.
	Electronic slate (smart slate)	Use for semiautomatic syncing.
	In-camera timecode, with audio sync	Use for automatic, "slateless" syncing in the telecine.

Film Shoot Specifications (Continued)

Element	Supported Formats	Notes
Slate information	Camera roll, scene and take, shoot date, sound-roll ID	Mark sound-roll ID as a backup.
Sound-roll cues	Sound-roll ID, date, start and end time-of-day timecode	Include verbal time-of-day cues as a backup.

Viewing Dailies

Viewing dailies is a critical part of the film production process. With an Avid system, there are two different ways to produce dailies.

- The *film dailies method* relies on work print for screening, transferring, and creating conformed cuts during editing.
- The *video dailies method* relies on videotape transfers from negative for screening, transferring, and creating conformed cuts during editing.

Film Dailies Method

The film dailies method involves the procedures shown in "Film Dailies Method" on page 806. Specifics, such as tape formats, vary depending on facilities and needs.

The following steps describe the film dailies method:

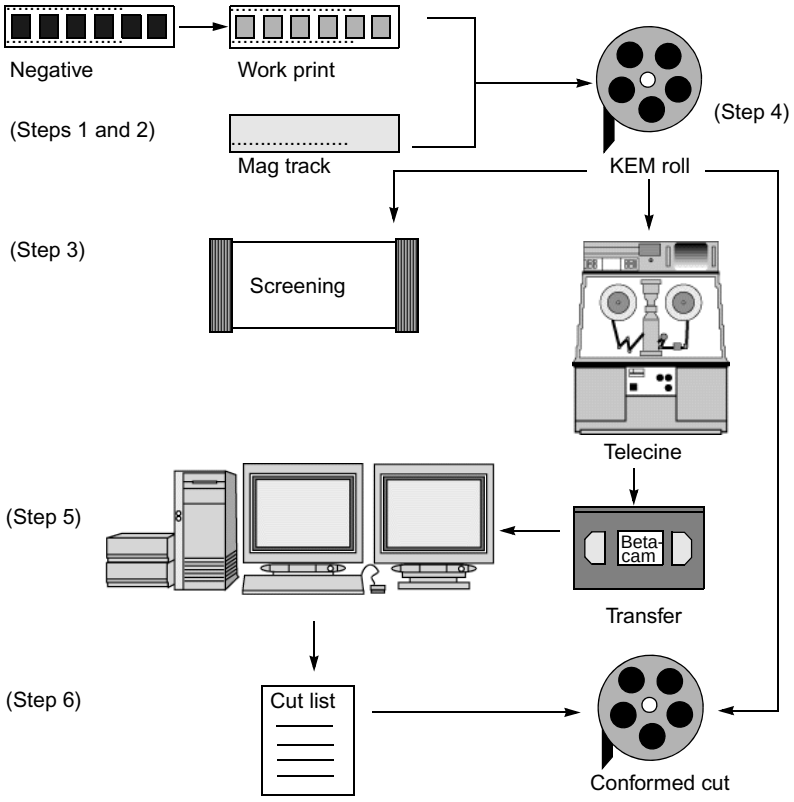
1. Prepare work print for the circled (selected) takes.
2. Sync work print with audio mag track, and assemble each take on a roll with ink numbers.
3. Screen the film dailies before telecine transfer.
4. Mount and transfer the rolls to tape in telecine.
5. (Option) Enter ink numbers manually into the Avid system after you capture, to match the ink number on the work print.
6. Generate ink-number lists for preparing cuts from the work print, and key-number lists for conforming the negative.

When you work with film dailies and work print, the advantages are:

- You can screen the dailies immediately after the lab work.
- You can use work print previews to view the full film aspect ratios, resolutions, and contrast ranges. For this reason, film dailies are often preferred for feature film projects.

The disadvantage is that the magnetic track and work print require additional facilities, procedures, and costs.

Film Dailies Method



Video Dailies Method

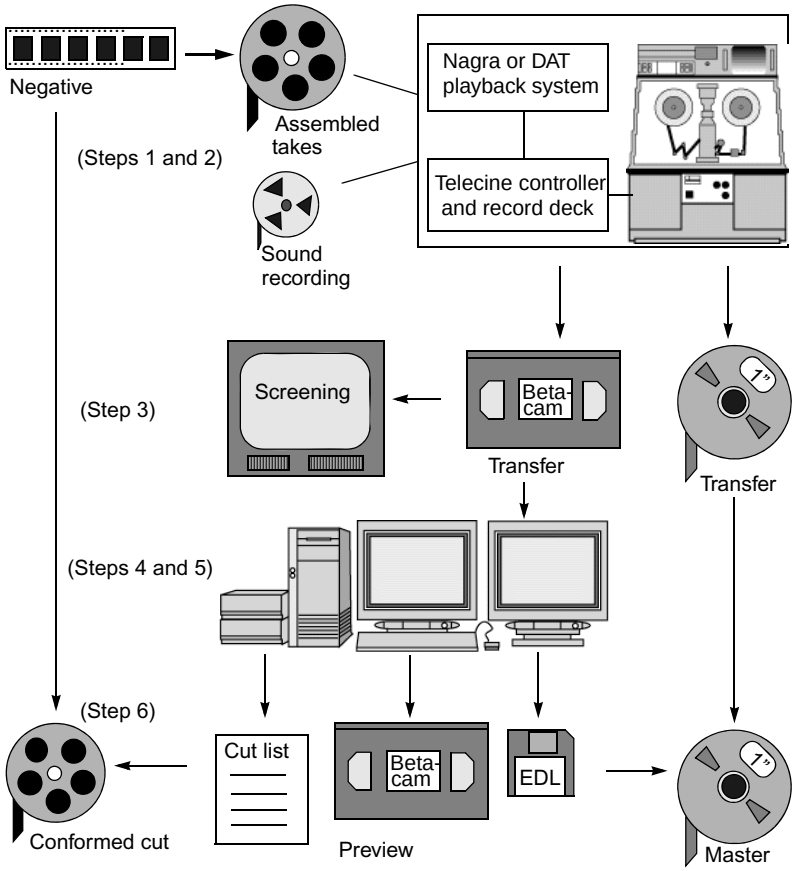
The video dailies method involves the procedures shown in "Video Dailies Method" on page 807. Specifics, such as tape formats, vary depending on facilities and needs.

The following steps describe the video dailies method:

1. Prepare film negative for the circled (selected) takes.
2. Transfer reels of negative synced to audio in telecine. Generate a simultaneous online transfer, or create the online transfer from selects after editing the sequence.
3. Screen the videotape dailies after the transfer.

4. Import existing key numbers and timecode information into the Avid system, then capture.
5. Edit using the Avid system.
6. Record a digital cut to preview the sequence with effects, or generate EDLs for editing the videotape transfers. Alternatively, generate a matchback list of selects for printing selects and conforming negative

Video Dailies Method



The advantage of working with video dailies and film negative is that you can avoid the cost of work print until the finishing stages, or altogether. The disadvantage is you are limited to the aspect ratio, resolution, and contrast range of video previews. For this reason, video dailies are preferred for television projects, but you can also use this method to economize on a feature film production.

Understanding the Film-to-Tape Transfer Process

You have your film rolls from the day's shooting, and you're ready to edit on your Avid system. To capture that footage into the system, you first need to transfer the film to videotape. This process uses a special film projector called a telecine (the term loosely translates as "video-film"). The telecine is usually part of a production system that includes audiotape recorders, a controller, and other equipment.

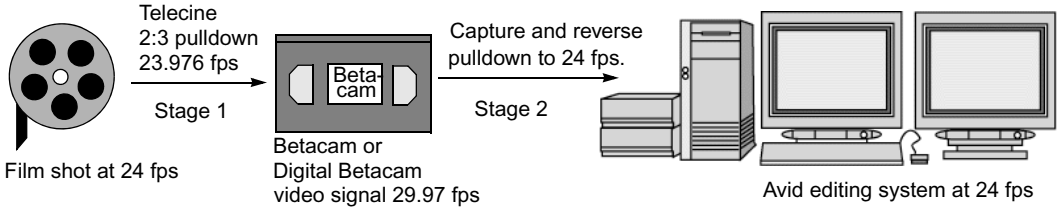
After you've decided on a telecine facility and have supplied your requirements, see "Film-to-Tape Transfer Guidelines" on page 817 and "Film-to-Tape Transfer Options" on page 818, the telecine facility performs the film-to-tape transfer. The steps in the process differ, depending on whether you include audio and whether the transfer produces NTSC or PAL videotapes. The following topics describe these steps.

Transferring 24-fps Film to NTSC Video

If you use an NTSC transfer, the film-to-video process takes place in two stages:

- Stage 1: Transferring Film to Video
- Stage 2: Capturing at 24 fps

The following illustration shows a simplified view of the NTSC film-to-video transfer process. For information about this workflow, see "Planning a 24p or 25p Project" on page 781.



Stage 1: Transferring Film to Video

The NTSC film-to-video transfer occurs as a two-part process: the telecine adds extra frames during transfer and, at the same time, slightly reduces the film's running speed.

Frames Versus Fields

To understand how the telecine transfers film to videotape, you need to understand the relationship between frames and fields.

An NTSC video image consists of 525 horizontal lines of information. The electron gun on a video monitor displays the odd-numbered lines first and then the even-numbered lines. Each full scan of odd-numbered or even-numbered lines constitutes a *field*. At 30 fps, each field takes 1/60th of a second to display; therefore, an entire frame of two fields is scanned each 1/30th of a second. The combination of these two fields (odd and even) is called *interlacing*.

A film frame, in contrast, is one full picture; it has no fields. The telecine process takes each film frame and creates a two-field video frame.

Part 1: Using a 2:3 Pulldown to Translate 24-fps Film to 30-fps Video

Film runs at 24 fps, and NTSC video runs at 30 fps. The difference in frame rates between film and video prevents a direct frame-to-frame transfer.

To compensate, the telecine process creates an extra six frames every second (the difference between 24 and 30). That is, it creates five video frames for every four film frames. But remember, each video frame is subdivided into two video fields. To be more precise, the telecine creates ten video fields (the equivalent of five video frames) for every four film frames. This is referred to as a 4:5 ratio. The following table states this relationship between film and video.

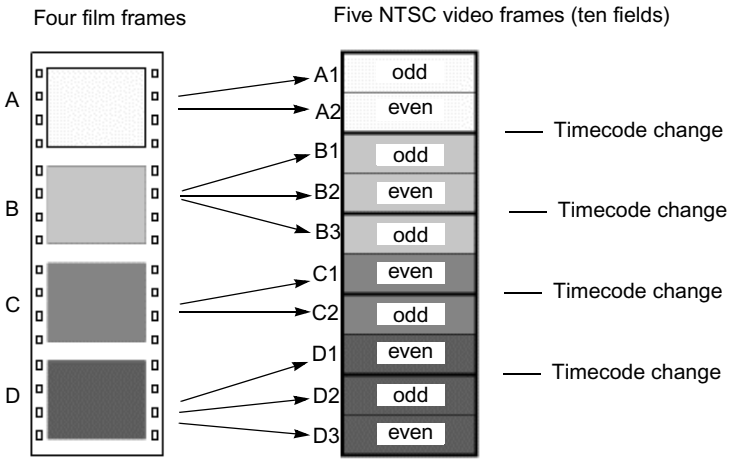
Ratio of Film to Video

Film	Video
24 fps	30 fps
4 frames	5 frames (10 fields)

The telecine uses a method known as *pulldown* to create the extra frames. As each film frame moves through the telecine projector, it is held in place (pulled down) while a specific number of fields are recorded on videotape. To transfer four film frames to ten video fields, the telecine process alternates between creating two and three video fields per film frame

(referred to as 2:3 pulldown). To transfer four film frames to ten video fields, the telecine pulls down the first film frame and records two video fields, pulls down the second film frame and records three video fields, and repeats the process.

The four frames in each series are referred to as A, B, C, and D. The standard method for identifying the resulting fields is to label them as A1, A2, B1, B2, and so forth. The following diagram illustrates the 2:3 pulldown process.



The telecine alternates between capturing odd-numbered and even-numbered fields. For example, B1 and B3 both contain the odd-numbered scan lines of the B film frame. Later in the transfer process, when the Avid editing application captures the fields, it must capture an odd-numbered and an even-numbered field for each frame.

When you view the resulting video, you get the impression that you are watching the video at 24 fps even though it is playing at 30 fps (or more precisely, at 29.97 fps).

Part 2: Slowing the Film Speed to 23.976 fps

NTSC video, the broadcast standard used in the United States, Japan, and other countries, plays at an actual rate of 29.97 fps, although it is usually referred to as 30 fps.

An accurate conversion requires exact adherence to the 4:5 ratio, but this ratio breaks down when you compare 24 fps to 29.97 fps. To achieve a true 4:5 ratio, the film frame rate is slowed down to 23.976 fps. The telecine process makes this correction automatically, slowing NTSC video 0.1 percent from the original film speed, so that the video plays at 99.9 percent of its original speed.

The following table describes the film to video ratio:

Ratio of Film to Video with FPS

Film	Video
24 fps	30 fps
4 frames	5 frames (10 fields)
23.976 fps (0.999 x 24)	29.97 fps (0.999 x 30)

Maintaining Synchronized Sound

In most cases, the sound for your production has been recorded on a digital audio system, such as a DAT (digital audiotape), or ¼-inch tape system, such as a Nagra recorder. You need to synchronize the sound with the picture and make sure they are in sync in your Avid editing application. You can take one of three basic paths:

- Transfer the original sound recording to mag track, sync the mag track to the film work print, and transfer both to videotape through a telecine process.
- Sync the original sound recordings to picture during the telecine process, and transfer both to videotape.
- Transfer only the picture through the telecine process, capture picture and sound separately, and sync them in the Avid editing application.

If the telecine transfers sound along with picture (one of the first two paths), the sound is slowed by 0.1 percent to maintain sync with the picture. The reference signal slows from 60 Hz to 59.94 Hz and the rate at which the audio is recorded changes from 44100 Hz to 44056 Hz, or from 48000 Hz to 47952 Hz.

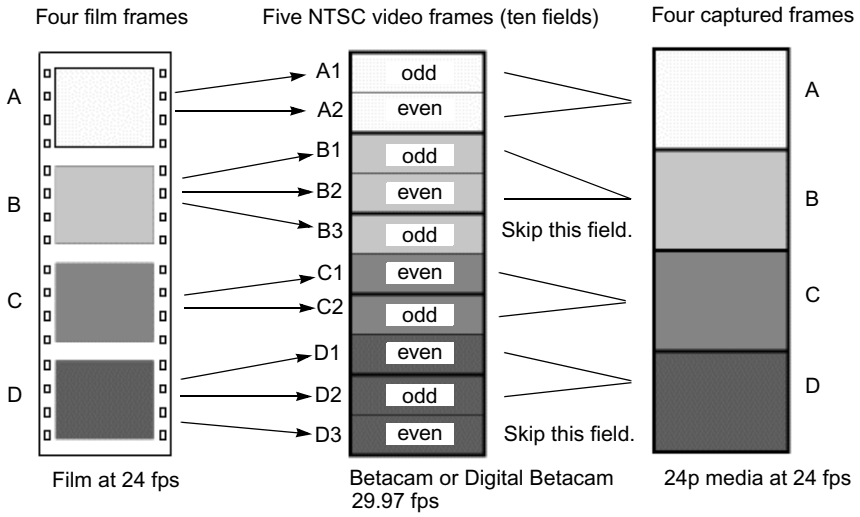
Stage 2: Capturing at 24 fps

The telecine has converted your film footage into video running at 29.97 fps. Now you're ready to use the capturing process to input the material as a 24p NTSC project.

During the digitizing process, your Avid editing application reverses the pulldown procedure to capture the film footage at 24 fps. It removes the extra fields added by the pulldown process to create full-frame, 24p media. The capture process captures video and audio at the slowed-down speed (0.999).

To capture audio transferred at 29.97 fps (video rate) you must set the pulldown switch to 0.99 in the Capture tool. For more information, see "Setting the Pulldown Switch" in the Help.

The following illustration shows each stage of the film-video-24p process.



If you have transferred sound along with picture, your Avid editing application captures audio at the slowed-down speed. Then during editing and playback, your application speeds up the play rate by 0.1 percent to play in sync with the 24-fps video. Audio plays at 44100 Hz (44.1 kHz) or 48000 Hz (48 kHz).

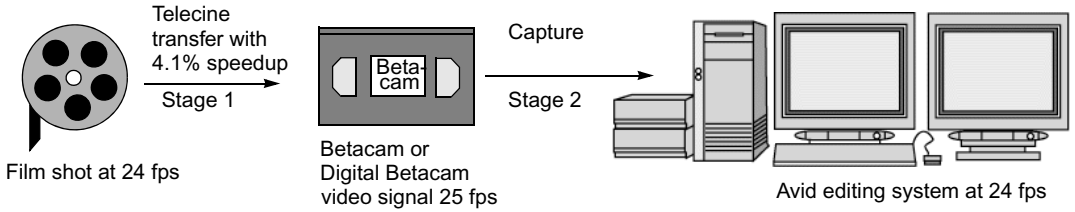
Now you can edit the material at 24 fps in your Avid application. This approach ensures that all your edits correspond to true film frames so you see an accurate representation of the finished film.

Transferring 24-fps Film to PAL Video

If you use a PAL transfer, the film-to-video process takes place in two stages:

- Stage 1: Transfer the film to videotape by speeding up the film rate during the telecine process.
- Stage 2: Capture the transferred videotape into the Avid system at the sped-up rate.

The following illustration shows a simplified view of the PAL film-to-video transfer process. For information about this workflow, see “Planning a 24p or 25p Project” on page 781.



There are two approaches to synchronizing sound, which are often referred to as PAL Method 1 and PAL Method 2.

PAL Method 1

With PAL Method 1, you synchronize sound with picture during the telecine process.

Stage 1: Transferring Sound and Picture to Videotape

As with an NTSC film-to-tape transfer, the telecine process creates two video fields for each film frame. However, because the film rate of 24 fps is close to the PAL video rate of 25 fps, most PAL film-to-tape transfers involve simply speeding up the frame rate. This speedup changes the frame rate from 24 to 25 (an increase of 4.1 percent). There is no pulldown that creates extra fields.

Some PAL film-to-tape transfers use pulldown. This method is not currently supported in Avid editing applications.

With PAL Method 1, there are two ways to sync sound with picture in the telecine process:

- Transfer the original sound recording to mag track, sync the mag track to the film work print, and transfer both to videotape through a telecine process.
- Sync the original sound recordings to picture during the telecine process, and transfer both to videotape.

In either case, the telecine process speeds up sound at the same rate as picture: 4.1 percent.

Stage 2: Capturing at 24 fps

After you've received the PAL transfer tapes, the next step is capturing the footage in a 24p PAL project. During the capturing process, your Avid editing application captures the material at the PAL rate of 25 fps, capturing every picture frame. It stores the two video fields as a single progressive frame, which you edit at 24 fps.

You must capture audio along with video at the PAL rate of 25 fps if you want to use audio that was transferred along with picture during the telecine process. You set the Audio Transfer rate as Video Rate (100+%) in the New Project dialog box. For more information, see "Audio Transfer Options for 24p PAL Projects" on page 794.

You have the option of playing back the footage at 24 fps or 25 fps. If you select 24 fps, the system slows both the picture and the sound by 4.1 percent for playback. This approach lets you edit at the original film rate, but the slowdown creates a limitation for audio. Because you capture the audio at a rate faster than playback, some audio samples are duplicated during playback, and sound quality is compromised.

Select the Edit Play Rate option in the Film and 24p Settings dialog box. For more information, see "Film and 24P Settings" on page 687 and "Displaying Project Settings" on page 615.

If you select 25 fps, there is a different limitation with audio. Because you are playing back at the sped-up rate (4.1 percent), the audio pitch rises slightly. This is usually acceptable for broadcast, so PAL Method 1 is primarily used for PAL television broadcast.

PAL Method 2

With PAL Method 2, you capture sound and picture separately.

Stage 1: Transferring Picture to Videotape

With PAL Method 2, you use the same telecine process for picture (create a video frame of two fields for each film frame, speed up rate by 4.1 percent). The difference is that you do not synchronize sound as part of the telecine process.

Some PAL film-to-tape transfers use pulldown. This method is not currently supported in Avid editing applications.

Stage 2: Capturing at 24 fps

Now that you have your picture-only videotapes (at the rate of 25 fps) and your source recording tapes, you need to follow a two-step process:

1. Capture the picture to create 24p media.
2. Capture the sound at the film rate of 24 fps.

When you created the project, you set the Audio Transfer rate as Film Rate (100%) in the New Project dialog box. For more information, see "Audio Transfer Options for 24p PAL Projects" on page 794.

In most cases, you will choose to edit at 24 fps. The sound maintains source quality (44.1 kHz and 48 kHz) and plays in sync with 24-fps video.

PAL Method 2 is used primarily for film projects.

How Avid Editing Applications Store and Display 24p and 25p Media

When your Avid editing application captures video that has been transferred from film (or video shot at 24 fps), it creates 24p media. It creates this media by capturing the video fields, by dropping extra pulldown fields (NTSC transfers only), by combining (deinterlacing) two fields for each film frame (A1+A2, B1+B2, and so on), and by storing the fields together as a full frame. The system always stores media as a fully reconstructed, progressive frame. It is the construction of this full frame that gives you the flexibility to create multiformat output.

You typically use 25p media when capturing film or video shot at 25 fps. In this case, the system also stores the media as a fully reconstructed, progressive frame. The difference is that there is no need for pulldown fields because there is a 1:1 correspondence between the source tape and the captured frames.

Displaying Media While Editing

When you click the Play button while editing a clip or a sequence (sometimes referred to as Edit Play), the system separates (interlaces) the progressive frames into fields and does the following:

- On the Source, Record, Playback, or pop-up monitor, your application displays the footage at 23.976 fps, 24 fps, or 25 fps, depending on your project and editing preference.

Choose your preference for playback in the Film and 24p Settings dialog box. For more information, see "Displaying Project Settings" on page 615.

- On an NTSC monitor, the system does one of two things:
  - If playing at 23.976 fps (audio pulldown ON), the system performs a 2:3 pulldown that replicates the telecine pulldown, and displays the interlaced media at 29.97 fps.
  - If playing at 24 fps (audio pulldown OFF), the system performs a 2:3 pulldown, drops every 1000th frame in the Client monitor, and displays the interlaced media at 29.97 fps.
- On a PAL monitor, the system does one of two things:
  - If playing at 24 fps, the system duplicates two fields per second to display the interlaced media at 25 fps.
  - If playing at 25 fps, the system performs a 4.1 percent speedup, maintains 1:1 transfer of film frames to video frames, and displays the interlaced media at 25 fps.

    For 25p projects, 25 fps is the only playback rate. The playback rate is 1:1 with no speed change.

Displaying Media During a Digital Cut

The Digital Cut tool lets you output multiple formats at various play rates, all from 24p and 25p media. When you click the Play Digital Cut button, the system displays the sequence as described in "Displaying Media While Editing" on page 816, depending on your selection in the Digital Cut tool.

For more information, see "Selecting Output and Timecode Formats for 23.976p, 24p, and 25p Projects" on page 568.

Film-to-Tape Transfer Guidelines

Observe the following general guidelines when transferring film to tape:

- Instruct the telecine facility to record timecode on the address track.
- Instruct the facility to use only a telecine transfer process when transferring to NTSC videotape. Do not use a film chain or any other transfer device.
- PAL transfers do not require pulldown, so you can use either a telecine or a film chain. However, quality is much better on a telecine.
- Transfer all of the project's source film footage to disk or tape by using either the NTSC or PAL method.
    - For NTSC projects, you can mix footage transferred at 24 fps (23.976 fps) or 30 fps (29.97 fps), and mix sound transferred at 1.0 or 0.99.

Do not mix 24-fps and 30-fps transfers on the same transfer tape.

    - For PAL projects, you cannot mix audio that has been transferred at 4.1 percent speedup (PAL Method 1) with audio that has not been sped up (PAL Method 2).

PAL film-to-tape transfers that use pulldown are not currently supported in Avid editing applications.

Film-to-Tape Transfer Options

The following topics describe options for transfer quality and various screening and editing aids that you can request during the transfer process, based on the considerations of budget and available facilities.

Transfer Quality

The quality of the film-to-tape transfers depends upon several options for the telecine transfer. The transfer-quality options available from a telecine facility include:

- **One-light:** This transfer involves a single setting of color correction values, resulting in the simplest, fastest, and least-costly type of transfer. One-light transfers are often used during offline stages of editing.
- **Best-light:** This transfer involves optimum settings of the color-grade controls, but without scene-by-scene color correction. Best-light transfers are an intermediate level in terms of both quality and cost.
- **Timed (scene-by-scene):** This transfer involves color correcting each scene or shot during transfer. Timed transfers are the most expensive and time consuming. This option sets up the proper black and white levels so that you can perform a tape-to-tape color correction from the source tapes, if needed.

You can use the film-tape-film-tape feature to perform two separate telecine processes for a project:

- Perform a one-light or best-light transfer to obtain the most material for the initial edits.
- After editing is complete, perform a timed, fully color-corrected transfer of the clips that will be used in the final cut.

For more information on the film-tape-film-tape option, see "Relinking Clips by Key Number" on page 177.

After you perform the final telecine operation, you can capture at a finishing resolution, such as 1:1 (uncompressed).

Additional Film Transfer Aids

The transfer facility might have available one or more of the following production aids, which you can include in your film-to-tape transfer:

- **Automatic logging:** Whenever possible, you should instruct the facility to log tracking information directly into a computer database program. Logs generated automatically are more accurate than manual logs and can be imported easily into the Avid editing system, see “Preparing Log Files for Import” on page 90. A log file typically indicates the relative timecode, key numbers, and pullin (“A” frames) for each clip that will be captured.
- **A keypunch at the head of each camera roll:** Ask the lab or transfer house to punch the head of each camera roll at the zero frame and give you a list of the corresponding key numbers. After you have captured, you can match this list with your captured material to check for potential transfer errors.
- **Burn-in code:** If the transfer facility is equipped with a timecode or film-code character generator, you can instruct the facility to display or “burn-in” tracking codes on the videotape transfer. Burn-in code provides visual feedback for logging and tracking footage.

Burn-in code cannot be removed from the image and should be used only for the offline stage of a project.

- **16:9 wide-screen format:** Your Avid editing application supports the 16:9 wide-screen display format. You can either shoot your footage by using a 16:9 lens, or transfer the footage anamorphically to display a larger area of the film aspect ratio during offline and online editing. Also, this aspect ratio lets you create media that takes advantage of new 16:9 monitors that conform to SDTV and HDTV standards.

Chapter 22
Working with HD Media

Avid editing applications include support for capture, editing, and output of high-definition (HD) media in the following resolutions:

- Avid DNxHD (8-bit and 10-bit)
- DVCPRO HD
- HDV

Avid DNxHD encoding technology delivers mastering-quality HD media at standard definition (SD) data rates and file sizes.

Avid editing applications also support play, edit, import, render, transcode, and export of high-definition (HD) media in 1:1 (uncompressed) resolution. For more information, see "Support for Uncompressed HD Media" on page 765.

Avid editing applications capture and process DVCPRO HD media and HDV media in its native format, through a 1394 port on your computer or through the 1394 port on an Avid Mojo SDI.

On a Windows system with an Avid Adrenaline or an Avid Mojo, the 1394 port must be on an optional IEEE-1394 card installed on a bus separate from the one used by the Avid Adrenaline or Avid Mojo.

The following sections describe the features and options that let you capture, edit, and output HD media:

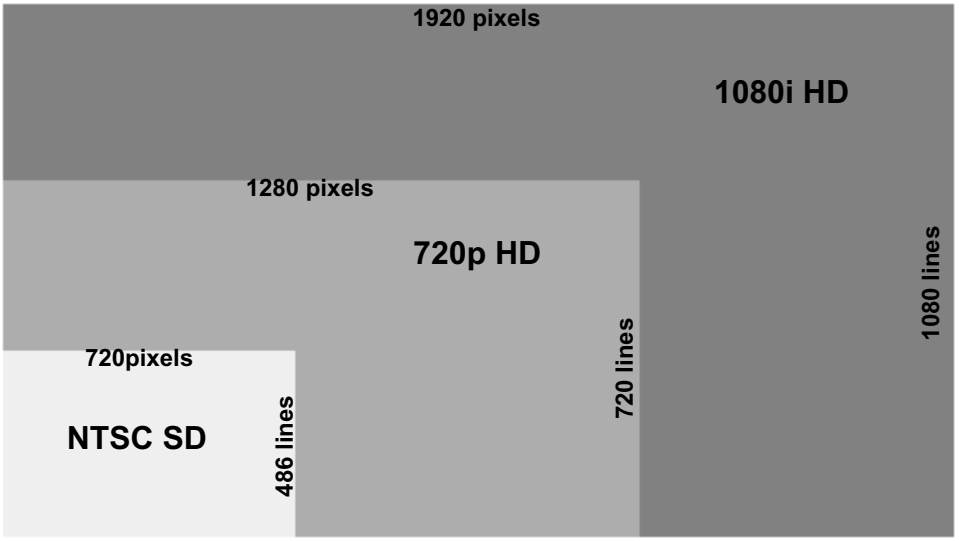
- High-Definition Television
- HDTV Workflows
- Editing in HD
- Working with HDV

High-Definition Television

High-definition television (HDTV) is a digital broadcasting technology that delivers a larger, clearer, more detailed picture than standard definition television (SDTV). HDTV refers to specific digital television (DTV) formats that have been standardized by the Advanced Television Systems Committee (ATSC) and adopted by the United States Federal Communications Commission (FCC). HDTV for PAL has been standardized by the Digital Video Broadcasting (DVB) consortium.

For a table that lists the HDTV digital formats and resolutions that are supported in your Avid application, see "Resolution Specifications: HD" on page 758.

HDTV uses a 16:9 aspect ratio in place of the standard definition 4:3 ratio. The following illustration compares the pixel size of the most common HD formats — 720p and 1080i — to that of the digital version of standard definition NTSC media (ITU-R 601). Both 1080i and 720p formats fill the 16x9 screen on HD television sets.



For more information about HD technology, see the *Avid HD Handbook: An A to Z Guide*, which is available on the Avid web site, www.avid.com.

HDTV Workflows

This section describes three common workflows for creating HDTV output:

- Creation of film-based television programs
- Creation of video-based television programs
- Creation of video graphics for broadcast

For a more detailed description of the conform workflow, see “Conforming Workflow” in the Help.

Film-Based Television Workflow

The following workflow describes the steps in creating film-based television programs that originate on film footage and that are planned for NTSC HDTV broadcast. This workflow uses features that let you change the project and sequence format, eliminating the need to create a new project and sequence. Modifying the format of the sequence lets you keep both offline SD material and online HD material available in the same project.

For PAL broadcast, transfer film at 1080p/25, edit offline in a 25p PAL project, and edit online in a 1080p/25 project.

“Offline Workflow: 24-fps Film Source for HDTV” on page 825 shows the offline stage of the workflow for such programs, and “Online Workflow: 24-fps Film Source for HDTV” on page 826 shows the online stage.

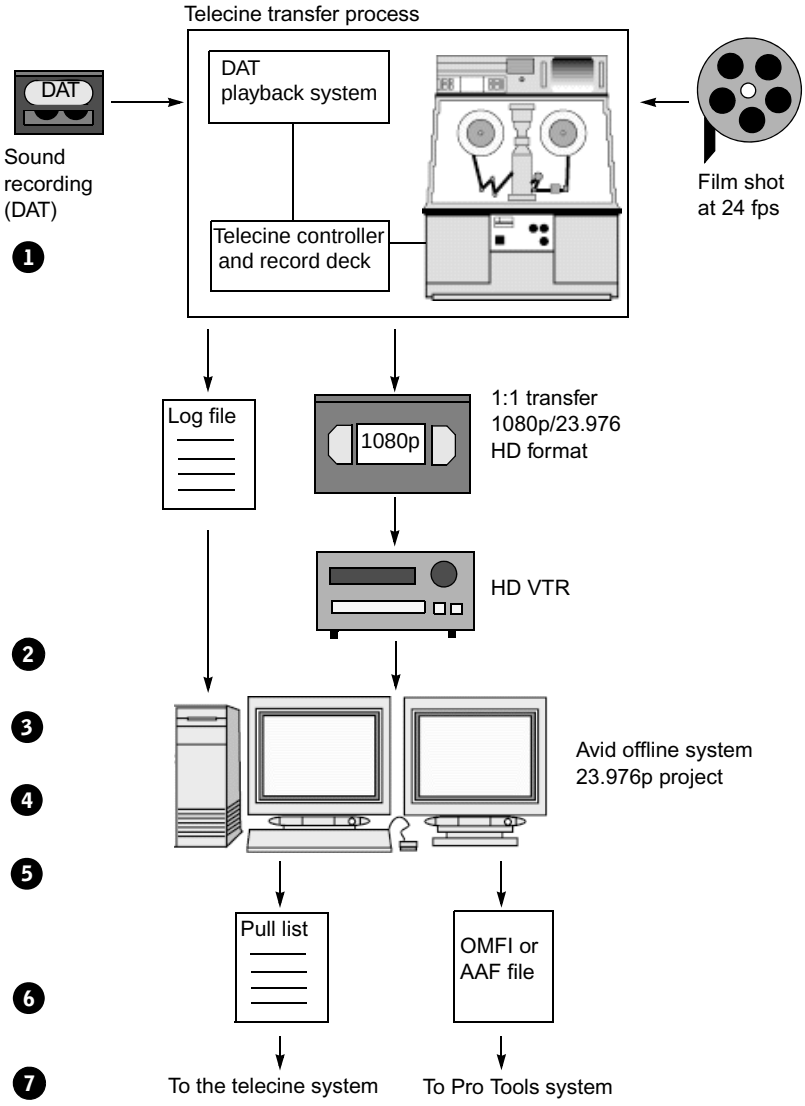
For a more detailed description of the conform workflow, see “Conforming Workflow” in the Help.

To create a film-based HDTV program:

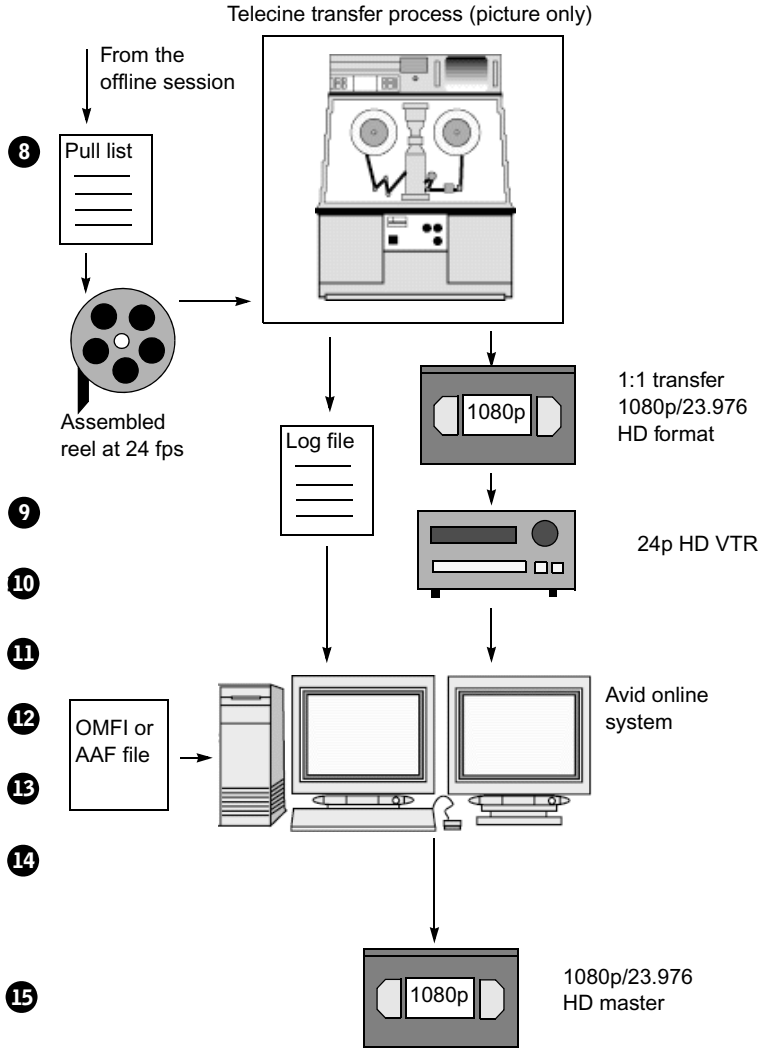
1. Use a telecine process to transfer 24-fps film footage to HD 1080p/23.976 video at 1:1. The transfer should also create a shot log (for example, a FLEx file).
2. Create a 23.976p SD project in any Avid editing application that supports a 23.976p project.
3. Convert the shot log file with ALE and import it into the project to create one or more bins.
4. Use a 24p deck to downconvert the HD video to ITU-R 601 SD video and batch capture the logged clips in an offline resolution, based on the shot log. The deck adds 2:3 pulldown (NTSC) or 4.1% speedup (PAL). The Avid system removes the extra pulldown fields and creates 23.976p media.
5. Edit at 23.976 fps, apply effects, and create a final sequence.

6. (Option) If a retransfer is needed, use FilmScribe to create an OCN (original camera negative) pull list for another telecine process, to retransfer footage used in the final edit.
7. (Option) Export an OMFI or AAF file to a Pro Tools digital audio workstation to create a final audio mix. For more information, see “Transferring Audio Files” in the Help.
8. A negative cutter uses the pull list to create a reel of selects from the original negative (picture only). The telecine process uses the assembled reel to create a full color-corrected or flat-grade transfer to tape. The process also creates a new transfer file.
9. Transfer the project files to an Avid editing application. If you are using an Avid Unity shared storage system, the project links to the existing SD media. If you are not using Avid Unity, transfer the SD media for reference.
10. Open the project and change its format to 1080p/23.976, see “Changing the Project Format” on page 830. Review the offline sequence. Then modify the format of the sequence to create a new 1080p/23.976 sequence, see “Modifying the Format of a Sequence” on page 832.
11. Convert the transfer file with ALE and import it.
12. Relink by KeyKode: relink the 1080p/23.976p sequence and clips by key numbers (FTFT). Then batch capture clips as HD media, using an HD resolution.
13. (Option) Import the final audio mix.
14. Complete any other finishing, using the original offline sequence for reference.
15. Use the Digital Cut tool to output a 1080p/23.976 master tape. Then convert the master tape to 720p/59.94 or 1080i/59.94 for broadcast. Optionally, use the Avid editing application to crossconvert to 720p/59.94 or 1080i/59.94 for preview or reference. The HD VTR can also create 1080i/50 for PAL broadcast.

Offline Workflow: 24-fps Film Source for HDTV



Online Workflow: 24-fps Film Source for HDTV



Video-Based Television Workflow

The following workflow describes the steps in creating video-based television programs that originate on video footage and are planned for HDTV broadcast.

The workflow for creating such programs uses a single system for offline and online editing, but you can adapt it to use one system for offline editing and another for online editing. This workflow uses features that let you change the project and sequence format, eliminating the need to create a new project and sequence. Modifying the format of the sequence lets you keep both offline SD material and online HD material available in the same project.

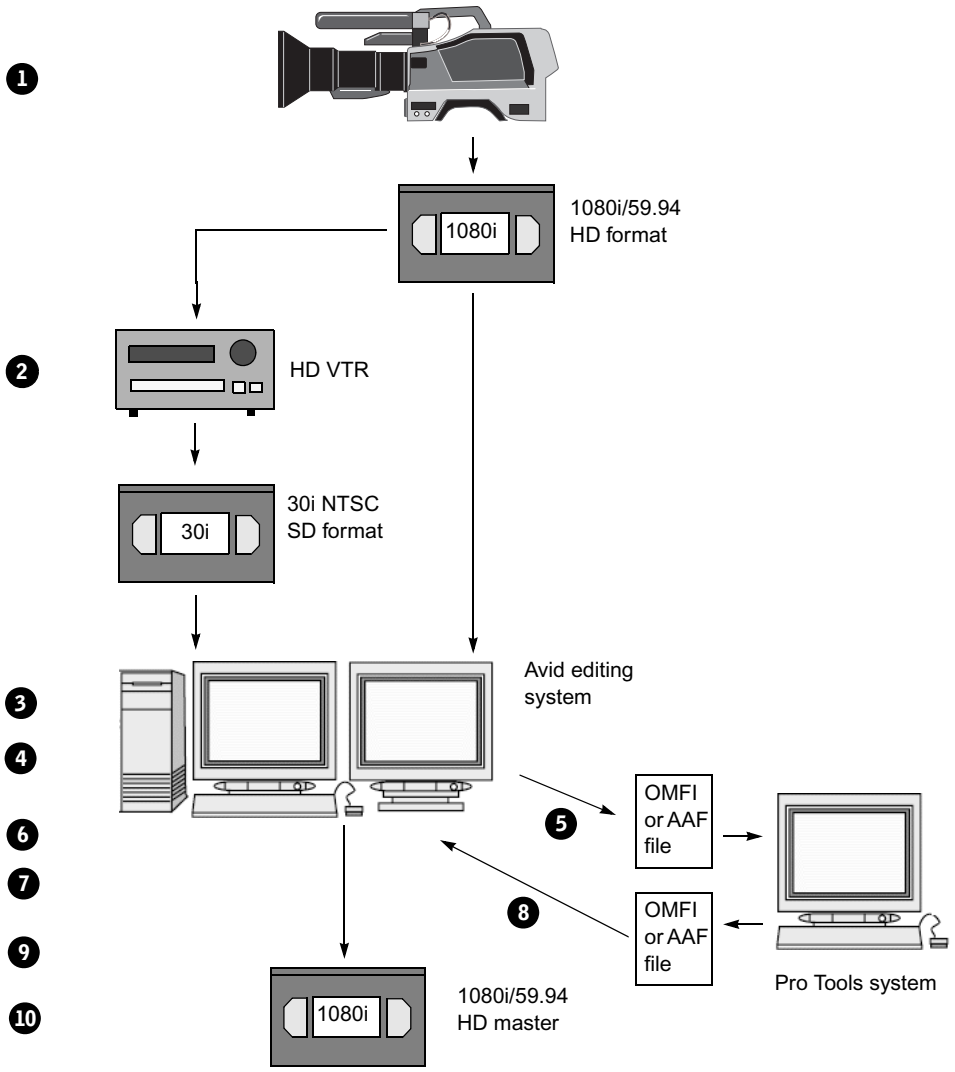
You can use this workflow for video footage shot at 720p/23.976, 720p/59.94 or 1080p/29.97. In these cases, however, you cannot simply change the project format (step 6). Instead, you need to create a new project that matches the source footage, open the bin or bins from the NTSC 30i project, change the sequence format, decompose, and batch capture.

For a more detailed description of the conform workflow, see “Conforming Workflow” in the Help.

To create a video-based HDTV program:

1. Shoot HD video.
2. Use an HD VTR to downconvert the source tape to 30i NTSC, 25i PAL, or 25p PAL.
3. Create an offline project, as shown in “Offline Formats for HD” on page 830. For example, if you plan to finish at 1080i/59.94, create a 30i NTSC project.
4. Capture your material. Edit, apply effects, and create a final sequence.
5. (Option) Export an OMFI or AAF file to a Pro Tools digital audio workstation to create a final audio mix. For more information, see “Transferring Audio Files” in the Help.
6. Change the project format to the corresponding HD online format, see “Changing the Project Format” on page 830. Duplicate the final sequence, and then modify the format of the sequence to create a new sequence in the corresponding HD format, see “Modifying the Format of a Sequence” on page 832.
7. Decompose the new HD sequence and batch capture from the source tape.
8. (Option) Import the final audio mix.
9. Finish the sequence by batch capturing graphics, recreating title media and reviewing the program for effects that need fine-tuning. Use the original offline sequence for reference.
10. Render all effects and output a master tape.

Offline/Online Workflow: HD Video Source for HDTV

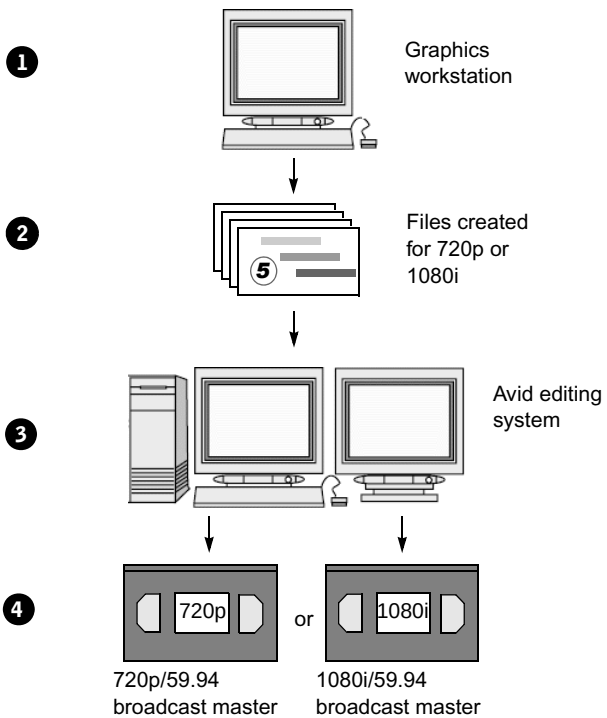


Broadcast Graphics Workflow

Another HDTV workflow produces graphics, such as bumpers and promos that are created in graphics programs for HDTV broadcast.

1. Create files on a graphics workstation, using either 1280x720 for 720p or 1920x1080 for 1080i.
2. Export the files to a location that the Avid editing system can access.
3. Create a 720p or 1080i project, import the files, edit, and finish.
4. Create a broadcast master tape in the desired format. Cross-convert to output an alternative format.

Broadcast Graphics Workflow

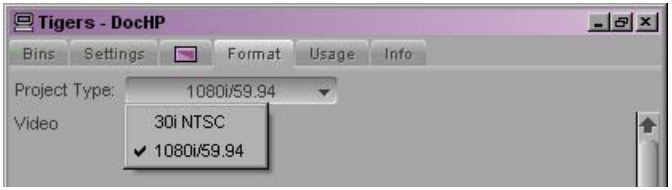


Editing in HD

The following sections describe features that are specific to HD projects.

Changing the Project Format

The Format tab in the Project window lets you change the format of the project to another format that shares the same frame rate.



This feature is especially useful if you are working with downconverted HD material in an offline-to-online workflow, see "Video-Based Television Workflow" on page 827. Each HD format has an equivalent SD format that you can use for offline editing, as shown in the following table.

Offline Formats for HD

HD Online	SD Offline	Notes
720p/23.976	23.976p NTSC	You cannot change between these project formats because the edit rates are different. See "Converting a 23.976p NTSC Sequence to 720p/23.976" on page 834.
720p/50	25p PAL	You cannot change between these project formats because the edit rates are different.
720p/59.94	30i NTSC	You cannot change between these project formats because the edit rates are different, see "Editing at 60 fps" on page 836. Use an NTSC 30i project for offline editing, then open a new 720p/59.94 project for online editing. Open the desired NTSC 30i bins and modify the final sequence, as described in "Modifying the Format of a Sequence" on page 832.
1080p/23.976	23.976p NTSC	For 23.976p NTSC, change the project format and modify the sequence.

Offline Formats for HD (Continued)

HD Online	SD Offline	Notes
1080p/24	24p NTSC or 24p PAL	Change the project format and modify the sequence.
1080p/25	25p PAL	Change the project format and modify the sequence.
1080p/29.97	30i NTSC	You cannot change between these project formats because the edit rates are different. Use an NTSC 30i project for offline editing, then open a new 1080p/29.97 project for online editing and open the desired NTSC 30i bins. You do not need to modify the sequence. Duplicate the sequence. Then batch capture the duplicated sequence or decompose and batch capture.
1080i/50	25i PAL	Change the project format and modify the sequence.
1080i/59.94	30i NTSC	Change the project format and modify the sequence.

Another use for this feature is if you are working in an HD project and need to capture SD material. In an HD project, you can capture only HD material, and in an SD project, you can capture only SD material. Temporarily changing from an HD project to an SD project gives you access to the SD compressions. You can capture the material you need, then change back to the HD project and work with both SD and HD clips, see "Mixing SD and HD" on page 835.

To change the project format:

1. Click the Format tab on the Project window.
2. Select the corresponding format for your workflow.

You can select only projects with the same edit rate.

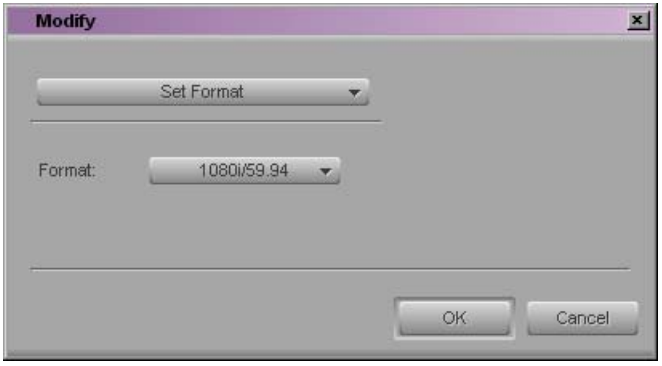
When you change the project format, the following changes take place:

- The hardware changes to support input and output for the new project.
- The available resolutions change to those of the new project.
- Any new sequences you create use the format of the new project.

If necessary, you can then modify the format of an existing sequence, see "Modifying the Format of a Sequence" on page 832.

Modifying the Format of a Sequence

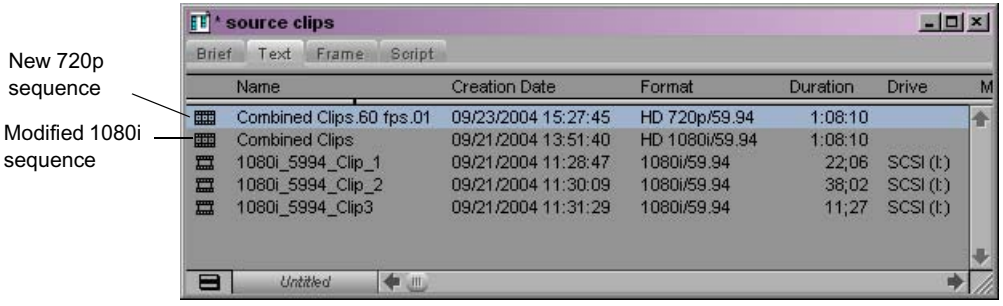
When your Avid editing application creates a sequence, it uses the format of the current project. You can change the format of an existing sequence by selecting Clip > Modify.



The choice of formats is limited to compatible frame rates of the sequence. For example, you can change an NTSC 30i sequence to 1080i/59.94 or to 720p/59.94, but not to 1080p/23.976.

In some cases, where the timecode format needs to be changed, your Avid application creates a new, modified sequence. Media for this new sequence is offline. In other cases, where the timecode format does not need to be changed, the application modifies the existing sequence and media stays online.

You can check the format of the sequence in the Format column of the bin. (For instructions on adding a column to a bin, see "Displaying Formats in a Bin" on page 836.)



The following table shows the choices you have for modifying sequences and how each type of sequence is modified.

Choices for Modifying Sequences

Original Sequence	Choices for Modifying	How Sequence is Modified
23.976p NTSC	1080p/23.976	Existing sequence is duplicated with the extension 1080p. Media in the duplicated sequence is offline. To convert to 720p/23.976, see "Converting a 23.976p NTSC Sequence to 720p/23.976" on page 834.
24p NTSC	1080p/24	Existing sequence is duplicated with the extension 1080p. Media in the duplicated sequence is offline.
24p PAL	1080p/24	Existing sequence is duplicated with the extension 1080p. Media in the duplicated sequence is offline.
25p PAL	1080p/25	Existing sequence is modified. Media remains online.
25i PAL	1080i/50 1080i/50 HDV	Existing sequence is modified. Media remains online.
30i NTSC	720p/59.94	Existing sequence is duplicated with the extension 60 fps. Media in the duplicated sequence is offline.
	1080i/59.94	Existing sequence is modified. Media remains online. Not available in 720p projects. For 1080p/29.97 projects, you can work with the 30i NTSC sequence without converting it.
	1080i/59.94 HDV	Existing sequence is modified. Media remains online.

To modify the format of clips not used in the sequence, create a sequence of the selected clips and then modify the sequence. One way to create a sequence of clips is to select the clips, hold down the Alt key, and select Bin > AutoSequence. See "Using the AutoSequence Command" on page 349.

To modify the format of a sequence:

1. (Option) Duplicate the sequence.
2. Select the sequence you want to modify.
3. Select Clip > Modify.

   The Modify dialog box opens.
4. Select Set Format from the top list.
5. Select the format to which you want to convert from the Format menu.
6. Click OK.

   A message box tells you whether the sequence has been duplicated or modified.

   Your Avid editing application changes the format of the sequence. In cases where timecode needs to be converted, the application creates a new sequence and unlinks the media. No media is converted.

   The Modify dialog box opens.

Converting a 23.976p NTSC Sequence to 720p/23.976

Because the source edit rates are different for these formats, you cannot simply change the project and sequence format. The following sequence is based on source material shot or transferred to 720p/23.976 and edited offline in a 23.976p NTSC project.

To convert a 23.976p NTSC sequence to 720p/23.976:

1. In the 23.976p NTSC project, duplicate the final sequence and move it to a new bin.
2. Decompose the sequence.
3. Select the master clips and export them as a shot log file.
4. Create a 720p/23.976p HD project.
5. Import the shot log file into a bin.
6. Batch capture the clips.
7. Open the SD bin containing the duplicated sequence.
8. Relink the SD sequence to the new HD clips. See “Relinking Clips to a New Project Format” on page 273.

Mixing SD and HD

You can mix SD and HD material in the same project. You can even mix SD and HD material in the same Timeline if the edit rates match. For example, you can edit both NTSC 30i and 1080i/59.94 into the same sequence and then play the sequence in real time. This feature is useful if you want to preview SD material in an HD project. For more information, see “Mixing Resolutions” on page 766.

- In an HD sequence, an SD image is stretched to fill a 16:9 monitor.
- In an SD sequence, an HD image is anamorphically squeezed to fit the 4:3 monitor.

You cannot output a sequence that mixes SD and HD material. To output a mixed sequence as HD, you need to transcode the clips that use the unsupported resolution to an HD resolution, see “Transcoding HD Media” on page 837. All master clips then share the same format.

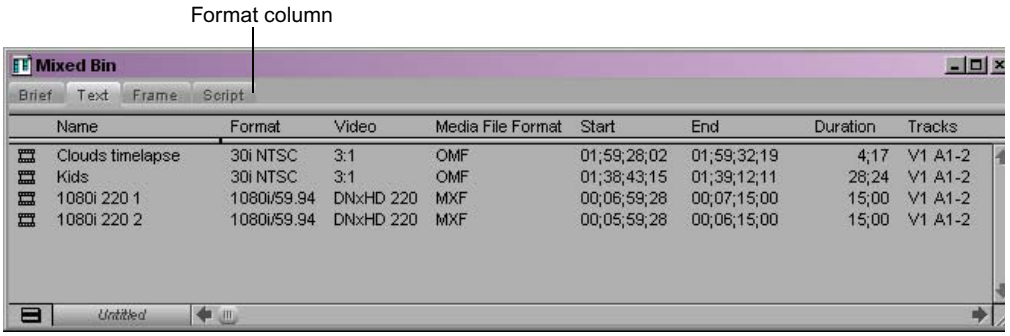
You might also need to apply an effect, such as Reformat or Resize, in which case you need to render the effects. This process creates new media in the format of the sequence.

You can set an option to highlight clips that do not match the project format. See “Highlighting Clips in a Mixed-Format Timeline” in the Help.

If you have a sequence that mixes SD and HD clips, and you need to recapture the SD clips in an HD resolution, you can create a subsequence of the SD clips, modify the format of the subsequence, see “Modifying the Format of a Sequence” on page 832, decompose, and recapture.

Displaying Formats in a Bin

The Format column displays the format of a clip or sequence as determined by the project type, such as 30i NTSC or 1080i/59.94. This is especially useful if you have both SD and HD clips in the same bin.



For information on displaying a column, see "Manipulating Bin Columns" on page 223.

Editing at 60 fps

The project type 720p/59.94 uses a screen resolution of 1280 x 720 at a frame rate of 60 frames per second. Editing at 60 fps is similar to editing at 24 fps because both resolutions are progressive — they use full frames instead of interlaced fields. Note the following:

- Single-frame step commands move at 1/60th of a second. Single-field step commands are deactivated; if you click a button, the application beeps.
- Draft Quality plays back at 30 fps. Full Quality plays back at 60 fps.
- You can mark IN and OUT points at 1/60th of a second increments.
- You can trim at 1/60th of a second increments.
- Transition effects default to one-second duration (60 frames).
- Deck control for capture and digital cut is limited to 30 fps. A message box warns you if you try to mark an odd timecode value (such as 01:00:00:03).

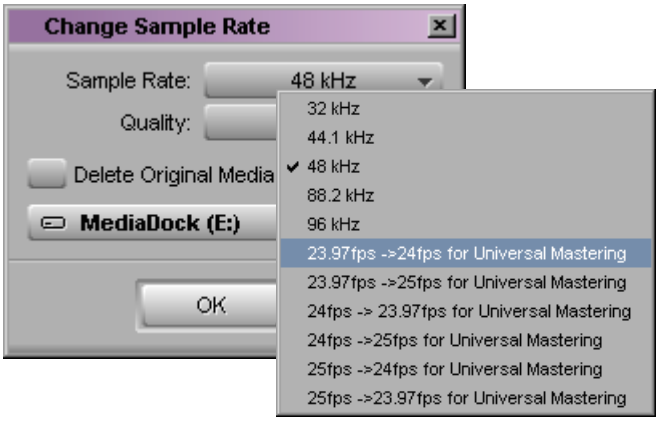
1080i/50 and 1080i/59.94 are interlaced resolutions that you edit at 25 frames per second and 30 frames per second.

Working with True 24 FPS Timecode

Avid HD editing applications support direct device control at 24 fps, enabling you to capture true 24-fps timecode from HD decks. When you are capturing 23.976-fps or 24-fps material in HD, the Capture tool displays 24-fps timecode for the Mark IN and Mark OUT points. After you capture a clip, the Start and End timecodes are also shown as 24-fps timecode.

Transcoding HD Media

For HD projects, the Consolidate/Transcode dialog box lists compatible HD resolutions. For resolution information, see “Resolution Specifications: HD” on page 758.For information on transcoding media, see “Using the Transcode Command” in the Help.



9. (Option) Select the Delete Original Media option if you want the system to delete the original media automatically after the conversion process is complete.
10. (Option) Click the Target Drive menu and select a drive for the new media files different from the drive setting in the Audio Project settings. For more information on Audio Project settings, see “Understanding Audio Project Settings” on page 118.

    Make sure that you choose a target drive with enough storage space for the generated media files and the ability to play back media.
11. Click OK.

Video Color Space for HD

Color space determines how the color components of the video signal are stored and processed. HD video uses an international specification for the YCbCr color space called ITU-R 709. It is an expansion of the earlier YCbCr specification for SD called ITU-R 601. ITU-R 601 and ITU-R 709 share some information: for example, for 8-bit components, black is mapped to 16 and white is mapped to 235. However, color values can change when you are converting from SD to HD, and vice versa. Avid HD editing applications automatically compensate for these differences.

YCbCr and YPbPr refer to the same color space. Avid editing systems use YPbPr to designate HD analog output, both in the Video Output tool and on the back of the Avid Adrenaline hardware. The HD tab of the Video Output tool provides sliders to adjust the YPbPr analog output through the YPbPr connectors on the back of the Avid Adrenaline.

Working with HDV

Avid editing applications provide the following High Definition Video (HDV) project types:

- 1080i/59.94 HDV
- 1080i/50 HDV
- 720p/29.97 HDV
- 720p/23.976

You can capture from an HDV device, edit in native HDV, and export to an HDV device using these project types.

You can also use HDV in other project types, but Avid editing applications are more efficient and perform better with the dedicated HDV project types. The other project types you can use include:

- 1080i/59.94
- 1080i/50
- PAL 25i
- NTSC 30i

You cannot capture or export native HDV in the non-HDV project types.

Understanding HDV

HDV is a low-cost prosumer format that allows you to record HD video onto standard DV videocassettes. This is achieved through the use of interframe compression, where a given frame in the video stream can be composed of information from adjacent frames. Frames are grouped into a sequence called a "Group of Pictures," or GOP. Long-GOP (also known as IPB encoding) refers to the structure of HDV media.

A GOP contains several different types of compressed frames:

- I frames, which are compressed frames that do not depend on any frames around them. I frames anchor the beginning of the GOP.
- P (predictive) frames and B (bidirectional) frames, which depend on the frames around them.

Interframe compression is more efficient than frame-based schemes (such as DV 25), allowing high-bandwith HD images to be contained on media designed for standard definition (SD). However, HDV is more difficult to edit since frames are not independent of one another. Avid provides a workflow that allows you to edit natively with HDV-compressed video without requiring a transcode to frame-based media, and without limiting where you make your cuts.

The Avid editing application uses a technique called long-GOP splicing when encoding an HDV MPEG-2 sequence for export. For more information, see "Long-GOP Splicing for HDV Encoding" on page 843.

HDV uses MPEG-2 video encoding and MPEG-1 audio encoding. 1080i records at about 25Mbps and 720p records at about 19Mbps. Sony provides HDV cameras that record at 1080i/59.94 and 1080i/50. JVC® cameras record at 720p/29.97 and 720p/23.976.

In the 1080i formats, the data rate of the video is reduced before compression by horizontally resizing the video display (raster) from 1920 x 1080 pixels to 1440 x 1080 pixels. In contrast, 720p HDV uses the standard raster size of 1280 x 720. A special resolution, DNxHD-TR (for Thin Raster), improves the performance of 1080i HDV editing. This resolution matches the 1080i HDV raster size, reducing artifacts that would come from repeated compressions when rendering effects and graphics.

HDV Basic Workflow

A basic workflow for an HDV project is as follows:

1. Select one of the following Avid project types depending on the format in which your HDV camera records:
   - 1080i/59.94 HDV
   - 1080i/50 HDV
   - 720p/29.97 HDV
2. Do one of the following:
   - Capture HDV material.
   - Import an HDV file.

   The media is brought in as one video track and two 48-kHz audio tracks.
3. Edit the material.
4. Select the sequence.
5. Output the sequence back to the HDV device using the Export to HDV Device dialog box.

You can also export the file in other formats or use Windows Media 9 for export to a third-party HD-DVD authoring system, See “Exporting HDV as Windows Media” on page 846.

For information on transferring and conforming HDV sequences on Symphony Nitris, see “Conforming an HDV Sequence on Symphony Nitris” in the Help.

Capturing and Importing HDV

You can capture HDV only through a IEEE 1394 port, as described in “Capturing HDV” on page 841.

You can import an HDV transport stream file (.m2t). Transport streams combine video and audio for transmission through an IEEE-1394 port. Your Avid editing application separates the transport stream after import or capture into the video and audio for editing.

After import or capture, the master clips in the Avid editing application contain HDV long-GOP MPEG-2 video in MXF format and 2 channels of uncompressed 48 kHz 16-bit audio.

Capturing HDV

How you capture HDV material depends on your system configuration:

- On a system with Avid Adrenaline or Avid Mojo hardware, you must use a 1394 port on your computer. On a Windows system, the 1394 port must be on an optional IEEE-1394 card installed on a bus separate from the one used by the Avid Adrenaline or Avid Mojo.
- On a system with Avid Mojo SDI hardware, use the 1394 port on the Mojo SDI.
- On a software-only system, use the 1394 port on the computer.

For more information, see "Capturing DV Media Directly from a DV Device" in the Help.

To capture HDV material:

1. Set up an HDV project, depending on the format in which your HDV camera records.
2.

Do one of the following:
   - Select Special > Device > IEEE 1394.
   - Click the DNA/1394 button on the Timeline to show 1394.
3. Select Deck Configuration in the Settings list of the Project window, and configure the HDV device.

   For more information about configuring decks and cameras, see "Configuring Decks: Basics" in the Help.
4. Select Tools > Capture.

   The Avid system automatically selects the correct resolution for native HDV.
5. Select other options, and start to capture.

   For more information about capturing, see "Capturing Media: Basics" in the Help.

Capturing with Timecode

The Sony 1080i HDV cameras mark accurate timecode and can be used for batch capturing.

The JVC 720p/29.97 HDV camera restarts timecode every time the system starts to capture. You cannot batch capture HDV material with a JVC 720p/29.97 HDV camera.

Importing HDV

To import HDV media, you must import an HDV transport stream. You cannot import transport stream types other than HDV.

The file name extension .m2t does not indicate if the transport stream contains HDV media.

To import an HDV transport stream:

1. Select File > Import.

   The Import As dialog box opens.
2. Select Files of Type > HDV files (*.m2t).
3. Select the target drive (no other import options are needed).
4. Click Open.

   Your Avid editing application copies the media in a fast import as native HDV.

Mixing Resolutions

You can mix SD resolutions and HD resolutions in the same Timeline with HDV as long as they have compatible frame rates and raster sizes. See "HDV Compatibility Guidelines" on page 849.

Playing Back HDV Media

With a DV device connected in IEEE-1394 mode, you can play back to the DV device in Draft Quality and Best Performance quality only. With no device connected, you can play back as Full Quality and use the full-screen playback monitor. You can play back to the DV device as Full Quality only if you first transcode the material to DNxHD or DNxHD-TR. For more information, see the table in "Rendering and Transcoding HDV Media" on page 843.

In a 1080i HDV project, in Avid DNA mode, you can play back through an Avid Adrenaline, an Avid Mojo, or a non-1394 output on an Avid Mojo SDI by doing the following:

- In the Project window, click the Format tab. From the Project Type menu, select a project type as described in the following table.

HDV Project Type	Select to play back through Avid DNA hardware
1080i/59.94 HDV	30i NTSC
1080i 50 HDV	25i PAL

The media is downconverted and plays in SD with an anamorphic squeeze.

Rendering and Transcoding HDV Media

You cannot render to an HDV resolution. Also, you might need to transcode the HDV sequence, see “Outputting HDV through Avid DNA Hardware” on page 845. See the following table for information on which resolutions are used for rendering and transcoding in each project type.

HDV Render and Transcode Resolutions

HDV Project Type	Renders or Transcodes to
1080i/59.94 HDV	DNxHD–TR 145
1080i/50 HDV	DNxHD–TR 120
720p/29.97 HDV	DNxHD 75, DNxHD 110, DVCPRO HD

For more complete information on rendering and transcoding, see “Basics of Effects Rendering” and “Using the Transcode Command” in the Help.

Outputting HDV

To send your edited HDV sequence back to an HDV device, you need to use a transport stream. You can use an existing transport stream or create a new one. To create a digital cut to go out to other devices, you need to first transcode the sequence.

Long-GOP Splicing for HDV Encoding

Your Avid editing application uses a technique called long-GOP splicing when encoding an HDV MPEG-2 sequence for export. When you export to an HDV device, the application uses splicing to reconstruct only the edited sections of the media, such as cut points, transitions, and segments that contain effects. Other areas of the sequence are copied intact. The result is faster encoding at higher quality.

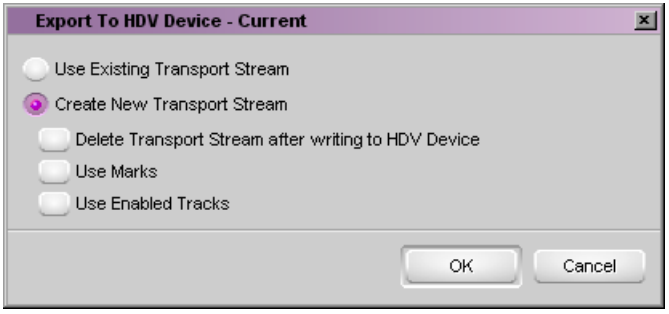
Exporting to an HDV Device

The Export to HDV Device dialog box lets you create a transport stream file. You cannot use the standard Digital Cut tool to output HDV. You must use a IEEE 1394 port to output the transport stream file back to the HDV device. You can export an entire sequence or the marked section between IN and OUT points.

To export the HDV material to an HDV device:

1. Do one of the following:
   - Select Special > Device > IEEE 1394.
   - Click the DNA/1394 button on the Timeline to show 1394.
2. Select the sequence or marked section.
3. Select Output > Export to Device > HDV.

   The Export to HDV Device dialog box opens.



4. Select options as described in the following table:

Export to HDV Device Settings

Option	Suboption	Description
Use Existing Transport Stream		Select this option if you previously exported or output a transport stream and saved it.
Create New Transport Stream	Delete Transport Stream after writing to HDV Device	Select to create a transport stream and then save it. Not available if you use an existing transport stream.

Export to HDV Device Settings (Continued)

Option	Suboption	Description
	Use Marks	Not available if you use an existing transport stream. When you select this option, the system uses current IN and OUT points in the selected clip or sequence to determine starting and ending frames for the export. To output the entire clip or sequence, deselect this option.
	Use Enabled Tracks	Not available if you use an existing transport stream. When this option is selected (default), the system uses tracks that are enabled in the Timeline. To output the entire clip or sequence, deselect this option.

5. Click OK.

   The transport stream file is created (or saved, if you used an existing transport stream).

Outputting HDV through Avid DNA Hardware

You can use Avid DNA hardware to output a sequence created with HDV media, but you must transcode the sequence and then use the standard Digital Cut tool.

To perform a digital cut on an Avid DNA system:

1. Do one of the following:
   - Select Special > Device > Avid DNA.
   - Click the DNA/1394 button on the Timeline to show DNA.
2. Select the sequence or marked section.
3. Transcode the sequence as described in “Rendering and Transcoding HDV Media” on page 843.
4. Select Output > Digital Cut
5. Proceed as with any digital cut.

   See “Using the Digital Cut Tool” in the Help.

Exporting an HDV Transport Stream

You can export an HDV transport stream for use in other applications.

To export an HDV transport stream:

1. Select the sequence or marked section.
2. Select Export in the Settings tab of the Project window.

   The Export Settings dialog box opens.
3. Select Export As > HDV.
4. Select Use Marks and Use Enabled Tracks as desired. See "Export Settings: HDV" on page 667.
5. Click OK.

You can also export to other formats, such as QuickTime movie, or use the Send To function to send the sequence to an application such as Sorenson Squeeze. You can also export to Windows Media 9 for finishing to HD-DVD.

To export to other formats:

- Export the sequence or use the Send To function as usual.

  See "Exporting Frames, Clips, or Sequences" or "Improving Workflow Using Send To" in the Help.

Exporting HDV as Windows Media

Use the following samples as a guide when exporting an HDV sequence as Windows Media for use on the Web or for use in DVD authoring:

To export HDV as Windows Media for use on the Web:

1. Select the sequence or clips you want to export.
2. Select File > Export.

   The Export As dialog box opens.
3. Click the Options button.

   The Export Settings dialog box opens.
4. Select Export As > Windows Media.

5. Set the following:

   Width: 720

   Height: 540

   FPS: 60

   Video Type: Progressive

   Pixel Aspect Ratio: 16:9

   Codec: Windows Media 9

   VBR: enabled and set to Quality

   Audio Settings: leave set at defaults
6. Click Save to export the sequence.
7. In the Export As dialog box, select the destination folder for the file.
8. Click Save.

   The sequence is exported using the selected settings.

To export HDV as Windows Media for use in DVD authoring:

1. Select the sequence or clips you want to export.
2. Select File > Export.

   The Export As dialog box opens.
3. Click the Options button.

   The Export Settings dialog box opens.
4. Select Export As > Windows Media.
5. Set the following:

   Width: 1440

   Height: 1080

   FPS: 60

   Video Type: Progressive

   Pixel Aspect Ratio: 16:9

   Codec: Windows Media 9

   VBR: enabled and set to Quality

   Audio Settings: leave set at defaults
6. Click Save to export the sequence.
7. In the Export As dialog box, select the destination folder for the file.

8. Click Save.

   The sequence is exported using the selected settings.

Finishing HDV on DS Nitris

The following procedure outlines the steps to take if you want to finish an HDV sequence on an Avid DS Nitris system.

To finish an HDV sequence on an Avid DS Nitris system:

1. When in a 1080i/59.94 HDV project, transcode your sequence to DNxHD 145.
2. Export as an AFE.
3. Import the AFE file to Avid DS Nitris v7.6 QFE 3 or later. To access Avid DS updates, go to www.softimage.com/avidds and click Download > QFE and other fixes.

To create an AFE file from an Avid editing product running on a Macintosh system, copy the project folder from the Macintosh system to the Avid DS Nitris system. Then use MediaLog on the Avid DS Nitris system to create the AFE file. For more information, see the Avid DS Nitris Conform Guide.

HDV Compatibility Guidelines

You can change the format of a project using the Project Type menu in the Format tab of the Project window. You can also mix certain formats in the Timeline as long as they are at the same frame rate. The following table describes which formats are compatible with HDV material that you capture.

HDV Compatibility

HDV captured at	Can change in Project Type menu to	Can mix in Timeline with
1080i/59.94 HDV	1080i/59.94 30i NTSC	DNxHD-TR DVCPRO HD All 30i NTSC resolutions (DV 25, 1:1, and so on)
1080i/50 HDV	1080i/50 25i PAL	DNxHD-TR DVCPRO HD All 25i PAL resolutions (DV 25, 1:1, and so on)
720p/29.97 HDV	Cannot change format	DNxHD

Chapter 23

International Character Support

This chapter describes how to take advantage of international character support (ICS) in your Avid editing application.

ICS allows you to display and input characters in languages other than English by doing the following:

- (Windows only) Install the local language operating system, and work within the operating system.
- (Macintosh or Windows) Use the standard English language operating system, install the language pack, and set the locale to your local language.

Avid Unity™ MediaNetwork v3.2 or later and Avid Unity ISIS™ also support ICS. For more information, see the MediaNetwork or Avid Unity ISIS documentation.

Using a Local Language Operating System (Windows Only)

When you start your Avid editing application for the first time, it automatically creates a keyboard setting for that language. You can view the keyboard mapping by clicking the appropriate Keyboard setting in the Settings list.

If you are using a language other than English, French, Italian, German, or Spanish, you might need to adjust the mapping for the keyboard so the keys in the Keyboard palette match the keys on your physical keyboard. See "Using Foreign Keyboard Mapping (Windows Only)" on page 859.

Choosing a Locale on an English Language Operating System (Windows and Macintosh)

This method is common on Windows systems, and it is the only option on Mac OS® X systems. When you use this method, you typically instruct your operating system to allow you to choose between English and a specific locale such as French, German, Chinese, or Japanese. This allows you to input and display characters in your chosen language even though you are using the basic English language operating system.

To take advantage of ICS on an English language operating system:

- Instruct your operating system to display the appropriate language in menus and dialog boxes and specify the language you want to use for keyboard layouts. Follow the instructions in one of the following sections:
  - "Non-English Character Support (Macintosh)" on page 852
  - "Non-English Character Support (Windows)" on page 855
- (Windows only) If you are using a language other than English, French, Italian, German, or Spanish, you might need to adjust the mapping for the keyboard so the keys in the Keyboard palette match the keys on your physical keyboard. See "Using Foreign Keyboard Mapping (Windows Only)" on page 859.

Non-English Character Support (Macintosh)

You can instruct the Mac OS X operating system to allow you to choose between English and a specific locale such as French, German, Chinese, or Japanese. This allows you to input and display characters in your chosen language even though you are using the basic English language operating system.

You need to specify the language in System Preferences and in the Get Info dialog box.

Setting the Language in System Preferences (Macintosh)

In System Preferences, you need to specify which language should appear in operating system menus and dialog boxes. You can also add the language in which you want keyboard layouts and input methods to function.

To set the language in the International window:

1. Select Apple menu > System Preferences > International.

   The International window opens to the Language tab.

2. In the Languages list, click the language you want, and drag it to the top of the list. If you do not see the language you want in the list, click Edit, select the language, and click OK.
3. (Option) Select other options in the Language and Format tabs.
4. Click the Close button.

For more information about the International window, see Mac Help by clicking the question mark icon in the window.

To add your language's keyboard layout, input method, and character set palette to the operating system's Input menu (Flag icon):

1. Select Apple menu > System Preferences > International.

   The International window opens to the Language tab.

2. Click the Input Menu tab.

3. Select the language or languages in which you want to type.
4. Select "Show input menu in menu bar."
5. Click the Close button.
6. In the Finder title bar, click the Flag icon and select the input language. You can also select a character set palette.

   The Flag icon changes depending on which input language you select.
7. Restart your system.

Specifying the Language in the Get Info Dialog Box (Macintosh)

If you are attempting to enter text within your Avid editing application and you are not seeing characters from your language, you need to specify the language in the application's Resources folder.

You do not need to perform this procedure if all of your language's characters appear correctly in the Avid editing application.

To specify the languages in the Get Info dialog box:

1. Locate the Avid editing application on your Macintosh HD. For example:

   Applications/*Avid editing application*/*Avid editing application*
2. Click the application icon, and select File > Get Info.

   The Get *application* Info dialog box opens.
3. Click the triangular opener for to Languages.
4. Locate your language in the list and select it if it is not already selected.
5. Close the Get *application* Info dialog box.

The next time you start the application, you can use the language character set that you specified in the International window. System menus and dialog boxes appear in your selected language. The Avid menus and buttons still appear in English, but you can now enter characters in your selected language.

The Get Info dialog box makes use of files known as language resource files to specify the language and regional code to use. The Avid software installation program automatically installs a set of language resource files for supported languages. If the language resource file that you want to use is not in this set, it might not be currently supported by this version of the Avid software.

Non-English Character Support (Windows)

You can specify a non-English keyboard layout and text entry format for the language in which you want to type.

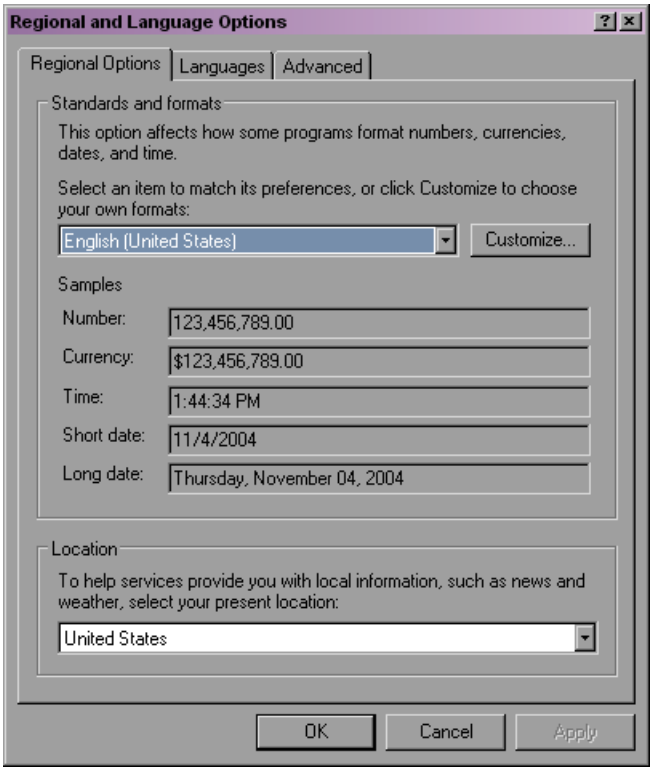
The operating system does not need to be in the same language as that in which you are typing.

To specify a language in which to type:

1. (Option) Plug in a regional keyboard.
2. Click the Start button, and select Settings > Control Panel.

3. Double-click Regional and Language Options.

   The Regional and Language Options dialog box opens.

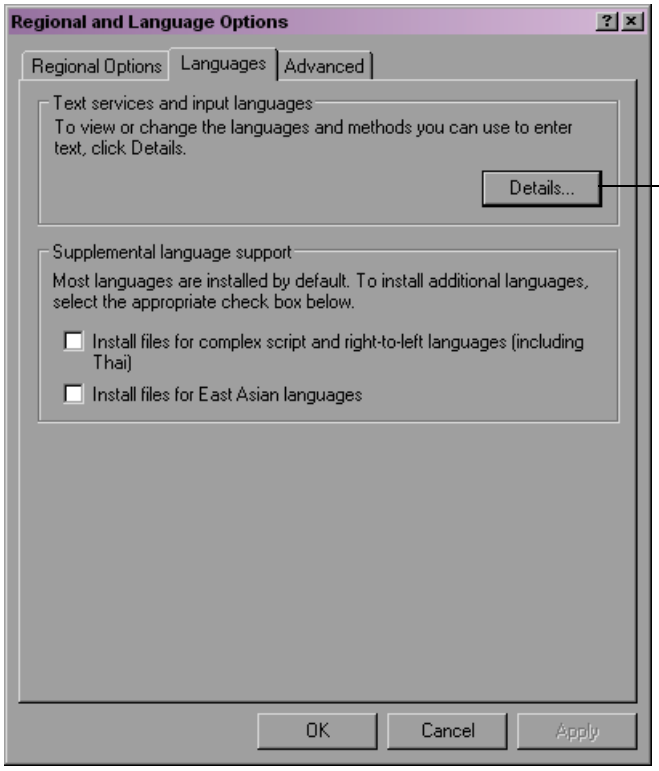


4. In the Regional Options tab, do the following:

   a. In the “Standards and formats” area, select a language.

   b. In the “Location” area, select your country.

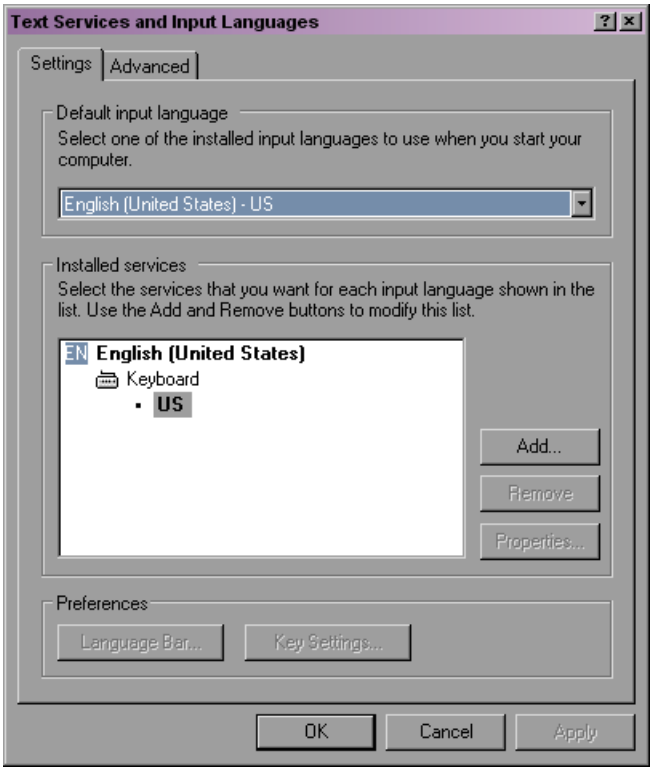
5. Click the Languages tab.


Regional and Language Options
Regional Options
Languages
Advanced
Text services and input languages
To view or change the languages and methods you can use to enter text, click Details.
Details...
Details button
Supplemental language support
Most languages are installed by default. To install additional languages, select the appropriate check box below.
Install files for complex script and right-to-left languages (including Thai)
Install files for East Asian languages
OK
Cancel
Apply

6. Select the option you want in the Supplemental Language Support area.

7. In the “Text services and input languages” area, click Details.

   The Text Services and Input Languages dialog box opens.



8. In the “Installed services” area in the Settings tab, select a language and a keyboard layout for that language.
9. If the language you want is not in the list, click Add, select an input language and a keyboard layout for the language, and then click OK.
10. If you need to install additional files, the Insert CD-ROM dialog box opens. Follow the instructions and click OK.
11. In the “Default input language” area, select an input language.

You have to select a language in the Installed Services area (step 8) before it appears in the Default input Language list.

12. Click OK to close the “Text Services and Input Languages” dialog box.
13. Click the Advanced tab, and select your language in the “Language for non-Unicode programs” area.

It is important to select your language in the "Language for non-Unicode programs" area; do not skip this step.

14. 12. Click OK to close the Regional and Language Options dialog box.

    A keyboard icon appears in the taskbar to allow you to switch keyboard layouts.

15. Restart the system.

For more information, see the Windows XP Help.

Using Foreign Keyboard Mapping (Windows Only)

When you start your Avid editing application under a new locale, the application automatically creates a Keyboard setting for your language. You can view the keyboard layout by clicking the appropriate Keyboard setting in the Settings list.

The default Avid keyboard layouts for English, French, or German languages map correctly to the characters on the physical keyboard. However, if you are using a different language, the display in the Keyboard palette might not match your physical keyboard layout. You can use the Foreign Keyboard Mapping button in the Keyboard palette to display the correct character in the Keyboard palette.

The Foreign Keyboard Mapping function is not needed for English, French, or German.

Avid supports the international English keyboard for Spanish and Italian. The default keyboard setting for Spanish and Italian is an English keyboard. If you use a Spanish or Italian keyboard, use keyboard mapping to match the physical keyboard to the Keyboard setting layout.

To set the keyboard mapping for a key:

1. Double-click Keyboard in the Settings list in the Project window.

   The Keyboard palette opens.

2. Compare the layout to your physical keyboard.

   If some of the letters do not match, you can change the characters displayed in the Keyboard palette.

3. Click the Foreign Keyboard Mapping button.
4. Click the key that you want to change in the Keyboard palette.

   The key changes to white.

5. Press the corresponding key on your keyboard.

   The image in the Keyboard palette changes to match your keyboard, and the mapped key changes to blue.

Each language has a certain number of keys that do not map to functions in your Avid editing application. These are referred to as "dead" keys. You cannot map functions to these dead keys. If you try to do so, the system displays an error message.

Recommendations and Restrictions for International Character Support

The following topics describe recommendations and restrictions for using international character support in your Avid editing application.

Avid Supports English Plus One Locale

Make sure that your projects do not contain characters from more than one locale. String compare searches might not work correctly if you combine file names from different locales.

Within a workgroup, all the systems on the network must be either English or one specific locale.

Entering ASCII Characters in Double-Byte Systems

If you are working on a double-byte (two-byte) operating system, you should use single-byte ASCII characters to name bins, projects, tapes, or other Avid elements. If you use double-byte characters, the characters might appear with extra space between them and the names might not be recognizable by other systems.

Operating systems that use a double-byte character system usually allow the user to choose between single-byte ASCII or double-byte ASCII characters. If you have a choice, use single-byte characters when entering ASCII text.

Characters to Avoid When Naming Avid Elements

Do not use the Japanese yen symbol in the ASCII character set. The system converts the symbol to a backslash, and this can cause problems with pathnames.

Do not use the Y-acute and Y-diaeresis characters. The system does not recognize the Y-acute character, and it can cause problems with file recognition. The system might not display the Y-diaeresis character correctly.

When you name a Mac OS X computer, use single-byte ASCII characters without spaces. The system uses the name in .pmr files (in the OMFI MediaFiles folder), and non-ASCII characters and spaces can cause problems with .pmr files.

If you plan to move projects between Macintosh and Windows systems, avoid using characters that are not in both the MacRoman and Latin1 (ANSI) character sets. The following two files on the Knowledge Base list the characters you should avoid:

- MacRoman Characters not in ANSI Encoding
- ANSI Characters not in MacRoman Encoding

To access the files on the Knowledge Base:

1. Go to www.avid.com/.
2. Click Support & Training, and then click Knowledge Base.
3. Type **`MacRoman`** in the Search the Knowledge Base text box, and then click Search.

   A search results page opens.
4. Click the appropriate file name link.

   The file opens.

The files are the same for each product.

To display the characters in the HTML files correctly, you might have to set your Web browser to display characters in Unicode format.

To display characters in Unicode format on Internet Explorer:

- Select View > Encoding > More > Unicode (UTF-8).

EDL Manager Does Not Save Diacritical Marks or Chinese Characters

You can display diacritical marks and Chinese characters in EDL Manager but you cannot save an EDL and reopen it with those characters preserved. This includes saving the file to the desktop or to an RT-11 formatted disk. If you plan to create and save an EDL from your sequences, you must use ASCII names for tape names.

It is common for customers that use EDLs to copy the EDL onto an RT-11 formatted floppy disk. The RT-11 format has a very limited character set: A-Z (capital letters only), 0-9, space, and $.

Traditional Chinese Big 5 Character Set

When using Traditional Chinese, you should set the Input Method Editor (IME) to use the Traditional Chinese Big 5 character set.

- (Windows) When setting the Input Locale in the Regional Options dialog box, click IME Settings and select the bottom option, which translates to “Only show Big 5 characters.”
- (Macintosh) You can choose the Big 5 character set from within the International setting in System Preferences. When you select Traditional Chinese in the International setting, the system displays a menu with several options. Select Big 5.

Rebuilding the asifont.map File (Windows Only)

If you install the Avid editing application after you set up your system for international character support, you should not need to rebuild the asifont.map file.

If you cannot display Chinese or Japanese characters in the Avid editor, you might need to regenerate the asifont.map file under the Japanese or Chinese locale. Do one of the following:

- Navigate to Program Files\Avid*application name* and locate the asifont.map file. Delete the file. Make sure you are in the Japanese or Chinese locale and start the application again. The system automatically creates a new Japanese or Chinese asifont.map file.
- Uninstall the application. Then reinstall the application under the Japanese or Chinese locale.

Note that the system uses the current locale to create the asifont.map file appropriate for that locale.

Additional Tips and Limitations for International Character Support

The following list describes additional tips and limitations that you should be aware of when working with international characters:

- When using international character support, you must install the Avid editing application after the system has been set up for international character support.
- Tips for creating vertical text on Japanese and Chinese Windows systems: When you want to create a title with vertical lettering, use one of the fonts with an “@” symbol at the beginning of its name. Also, use the Marquee title tool rather than the Classic Title tool to create vertical text lines.

To create vertical text on Japanese and Chinese Windows systems:

1. Create a Text Box, then exit Text mode.
2. Select a font with an @ sign at the start of the name for the text box.
3. In the Transform pane, rotate the box by setting rotate Z to -90
4. Enter Text mode, and type in your text. The text appears moving down vertically.

You can create a style or template for this kind of text box to make the titles easier to create.

- Files exported from a FIGS (French, Italian, German, or Spanish) OS might not display correctly and might not import on an English OS. This problem might happen when you export files with certain diacritical marks in the exported file name, such as a capital A, I, or E with circumflex. The file appears and imports correctly on a FIGS OS but might not appear correctly on an English OS. When you attempt to import the incorrectly appearing file, the system displays the following error message:

  "File: [File name and location] not found."

  followed by:

  "EXCEPTION: SYS ERROR, status: 2, msg: The system cannot find the file specified."

  To work around this limitation, retype the file name (with the same diacritical marks if desired) and then import it from the English OS.

- When using New Change input (Traditional Chinese), some combinations of keys cannot be used to form Chinese characters. For example, R + Y and S + D cannot be used to form Chinese characters in user, project, bin, clip, and sequence names. Question marks result when the enter key is hit in order to execute that key combination. (Other known non-functional combinations are R + J, F + U, Q + U + Q + U.)
- You might see problems with certain combinations of Japanese and Roman characters in the user name. The following limitations apply to user names:
  - Avoid mixing Roman and Chinese or Japanese characters in user names. The system might generate error messages or extra user names with incorrect text strings.
  - Chinese and Japanese user names are not supported on Avid Unity Workgroups. If you plan to be part of a workgroup environment, use Roman characters for user names.
- When naming Avid elements, do not use fonts that have an "@" sign at the start of the font name. These fonts are used when intending to display text vertically and, with elements such as bin and clip names, might position letters or characters on their side.

- When you are using diacritical marks, exporting a bin as AFE with the default name might cause MediaLog to freeze. The resulting files have incorrect filenames.

  To work around this limitation, avoid using the default name when exporting a file as AFE, ALE, or Tab Delimited. Rename the file to be exported in the Export dialog box.

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